AMERICAN VETERINARY REVIEW.

SEPTEMBER, 1899.

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EDITORIAL.

AN IMPORTANT EDUCATIONAL STEP.

On July 7th, the news was given to the daily press by Chancellor Henry M. McCracken, of the New York University, that a consolidation had been effected between the New York College of Veterinary Surgeons, the American Veterinary College, and the New York University, whereby the two veterinary institutions had become affiliated with the latter as its "Veterinary School," under the name of the "New York-American Veterinary College." The resolution of the University trustees authorizing this action upon its part is as follows:

"Whereas, New York University maintains the principle now generally accepted in America that each degree-giving professional school should be part of a university, both to promote science and to enhance the value of professional degrees. Therefore, this university consolidates with itself the New York College of Veterinary Surgeons and the American Veterinary College, this school to bear the name of the New York-American Veterinary College and to be on a like footing with the other six schools of the university."

In giving out the news of the important action taken, the Chancellor promulgated the following statement:

"These two schools have outranked in age all other veterinary schools in the country, and have educated more than 1000 veterinary surgeons. Like the veterinary school of Harvard University, and that of the University of Pennsylvania, this school is placed upon a strictly university footing. Co-ordination and co-operation with the University-Bellevue Hospital Medical College will thus be secured to the advantage of both schools, and of medical science, and to the promotion of the health of the community. In order to enter the school a student must have obtained forty-eight counts in a Regents' examination, this being considered the equivalent of a high school education. The Re-

gents have been gradually raising the requirements for admission to the professional schools, and in this I think they have performed an important public service. The education required now before a young man can commence the study of a profession is practically equal to the college education of forty years ago."

When the two veterinary colleges were asked to consider the proposition of affiliation with the University a joint meeting of the faculties and trustees of these schools was held, and the question thoroughly discussed, with the result that a committee was appointed to arrange the details of union. The first thing done by this committee was to ask for the resignation of each member of the faculties of both veterinary schools, thus making the organization of the new school absolutely free in the hands of the University, who avowed that it was their intention to establish in the city of New York the strongest veterinary school possible.

The following faculty was appointed, the institution with which each professor has been connected heretofore, if any, being indicated in parenthesis:

Henry M. McCracken, D. D. LL. D. (New York Univ.), Chancellor.

Alexander F. Liautard, M. D., V. M. (American Veterinary College), Dean, Professor of Anatomy, Clinical Surgery, Veterinary Jurisprudence, and Sanitary Medicine.

James L. Robertson, M. D., D. V. S. (American Veterinary College), Professor of Principles and Practice of Veterinary Medicine and Clinical Medicine.

Harry D. Gill, V. S. (New York College of Veterinary Surgeons), Professor of Principles and Practice of Veterinary Surgery and Clinical Surgery.

William J. Coates, M. D., D. V. S. (American Veterinary College), Professor of Anatomy, Clinical Surgery and Medicine.

Roscoe R. Bell, D. V. S. (American Veterinary College), Professor of Materia Medica and Therapeutics.

J. Elmer Ryder, D. V. S. (American Veterinary College), Professor of Obstetrics and Clinical Medicine.

Richard W. Hickman, Ph. G., V. M. D. (New York College of Veterinary Surgeons), Professor of Cattle Pathology and Meat Inspection.

J. Bethune Stein, M. D. (New York College of Dentistry and American Veterinary College), Professor of Physiology.

Wilfried Lellman, D. V. M. (New York College of Veterinary Surgeons), Professor of Helminthology and Canine Pathology.

John A. Mandel (University-Bellevue Hospital Medical College), Professor of Chemistry and Toxicology.

Edward K. Dunham, M. D. (University-Bellevue Hospital Medical College), Professor of Comparative Pathology.

William H. Park, M. D. (University-Bellevue Hospital Medical College), Professor of Bacteriology.

John A. Leighton, D. V. S. (American Veterinary College), Professor of Diseases of the Foot.

Julius Huelsen, Jr., D. V. S. (American Veterinary College), Professor of Sanitary Medicine.

Ernst J. Lederle, Ph. D. (New York College of Veterinary Surgeons), Lecturer on Milk Inspection.

Harry D. Hanson, D. V. S. (American Veterinary College), Associate Professor of Theory and Practice and Clinical Medicine.

George G. Van Mater, M. D., D. V. S. (American Veterinary College), Professor of Ophthalmology.

Charles E. Clayton, D. V. S. (American Veterinary College), Associate Professor of Clinical Surgery and Demonstrator of Anatomy.

Robert W. Ellis, D. V. S. (American Veterinary College), Lecturer on Zoötechnics and Veterinary Jurisprudence.

W. V. Bieser, D. V. S. (American Veterinary College), Demonstrator of Anatomy and Curator of the Museum.

Henry Henning, V. S., Assistant in Clinical Surgery.

The new school will open its first term on October 2, at 141 West Fifty-fourth Street, the building occupied for the past twenty-five years by the American Veterinary College.

What is the significance of this departure?

It is one more evidence of the steady advance of higher education for the American veterinarian. It means for the two old private schools—the pioneers of veterinary science on this Continent—perpetuation, elevation, and the opportunity to grow up to that standard which has been the dream and the ambition of those who have labored so long, so hard, and so lovingly to secure those ends. The REVIEW has in the past demanded justice for these struggling seats of veterinary learning because they needed a champion, and its conception of justice was that, while all efforts should be directed toward the elevation of the educational standard, no overt act should be committed by legislative aid which would crush them to the earth ere their ambitions could be fulfilled. The history of the private schools of this country, as a rule, is one of restless progress. Their records show that they have increased their facilities for teaching, their educational requirements for entrance and for graduation, and the length of their courses, just as rapidly as circumstances would permit, and there was nothing to indicate that the same

rate of progress would not be continued. When, therefore, legislation so inimical, not only to their prosperity and success, but to their very life, was sprung upon them, amounting almost to a demand to "stand and deliver," we entered our protest with as much energy as we possessed, and we are prepared to champion the cause of injustice to honest institutions to-day just as fervently. It has been stated by those who were instrumental in securing the laws which impinged so tightly upon corporate rights and moral justice that it was unavoidable; that the high standard or nothing was the choice; but we are told that the basis of all law is common sense, and it were better to await a time when that could prevail rather than commit a great wrong. However, when it was found that the sudden thrust of the new law meant extinction to every school in the State which depended upon their earnings for their sustenance, a committee went to Albany and laid the case before the representatives of the Board of Regents, who could not avoid admitting the seriousness of the situation, and they were appalled at the wrecks which were created by the workings of their law. As a result of that conference the entrance requirements were reduced from 48 to 24 counts for two years, and the limitation will expire with the close of the next college term, when it will leap back to the high rate. Under the reduced preliminary educational requirements the classes increased, but it was apparent that material progress could only be accomplished through a consolidation of the two schools and affiliation with a university. Therefore, when the powerful New York University held forth the inducement of its strength of fame and fortune, it was accepted. This having been accomplished, with a large faculty of experienced teachers, picked from the combined staffs of the three schools, in a city presenting the greatest clinical facilities that can be secured in any city in the country, and with the complete laboratory advantages of the University, a prediction of brilliant achievements for the new school is a safe one and it is a step that will redound to the great benefit of veterinary science.

In this connection, we beg to suggest to the Regents as

further fostering veterinary education in the Empire State that the number of preliminary counts be not too suddenly raised. It is 24 now; let it remain there for a few years. There is no danger of lowering the high standard set by them as the final outcome of their efforts. If in time the situation permits, a rise to 36 may not be hazardous, and possibly 48 could be safely undertaken by and by. But to fly back to 48 counts or equivalents in 1900 will be to retard the progress already made, and drive students without the border of this State.

We wish the new school success, and we felicitate the friends of veterinary education upon the prospects of its attainment.

THE "REVIEW" AND "THE JUBILEE."

The important veterinary conventions which are being held in New York City as this issue of the REVIEW is speeding by many mail routes to its readers in every State of the Union, will afford much interesting and profitable reading matter for several months. In the first number following the meetings (October) there will be given a graphic account of the entire proceedings of all the associations, written just as they occur, and which is intended to give those debarred from the pleasure of being present a clear, concise, and complete conception of the transactions, besides a number of the most important papers presented to the various meetings. These will be followed in subsequent issues by all the documents read that can be obtained, carrying out our cherished ambition to have REVIEW readers the best informed upon all matters of general professional interest.

INAUGURATION OF THE ILLINOIS LAW.

The Illinois State Board of Live Stock Commissioners, with the approval of Governor Tanner, have appointed M. H. McKillip, M. D. V. S., Jas. Robertson, D. V. S., and C. H. Merrick, D. V. S., to constitute the Board of Veterinary Examiners created by the Illinois Legislature last winter. Prof.

McKillip is President of the McKillip Veterinary College, Dr. Robertson is President of the Chicago Veterinary Society, and Dr. Merrick is an Assistant State Veterinarian practicing in Okawville, Ill.

The REVIEW has seen little in the career of Governor Tanner in the past to commend from a veterinary standpoint, and it is not an admirer of the Illinois veterinary law. It, however, believes that the practical working of that law is saved from disgrace, as the character of the new appointees is of the highest, and a guarantee that no act will be committed which is not in the interest of the honest administration of the spirit of veterinary morality and progress. We congratulate the veterinarians of the State, therefore, upon the promise held out through the *personnel* of the new board.

HONORS FOR DR. LIAUTARD.

Dr. A. Liautard, co-editor of the REVIEW, is enjoying a season of well merited honors. As a fitting testimonial to the esteem in which he is held by the alumni of the school which he has guided for twenty-five years, they are to present him with a loving cup at the silver anniversary of the A. V. C. At the organization of the "New York American Veterinary College," the amalgamated veterinary school of the New York University, he is chosen dean of the faculty, and to crown it all news is received from Baden-Baden that he was elected Vice-President of the Seventh International Veterinary Congress which was in session there during the early part of August. We hope to be able to give our readers a comprehensive report of the proceedings of the Congress in the October issue.

A NEW TREATMENT FOR AZOTURIA.

Dr. W. A. McClanahan, of Redding, Iowa, contributes a very interesting and valuable report of a new treatment for azoturia in this issue of the REVIEW. After all that has been written upon this mysterious malady of the horse we are as

much in the dark as to its therapy as when the disease was first recognized. A contribution to this aspect of the subject will be eagerly welcomed by practitioners everywhere. The author was induced to administer the iodide of potassium internally in large doses through the pathological conclusions of Prof. Lignière, published in the February REVIEW, in conjunction with the latest treatment for parturient paresis.

THE successful candidates at the recent examinations of veterinarians for first rank in the United States Army were Veterinarians McMurdo, Lemay, Treacy, Griffin, Lusk and Plummer. Poor Treacy, who labored so long and hard for the cause which made the examinations possible, lived just long enough to learn that he had passed. While the standard of the service will be fought for at the next session of Congress with renewed energy, the counsel and help of the deceased will be sorely missed.

ORIGINAL ARTICLES.

TUBERCULOSIS, ITS CONTROL AND ERADICATION.

BY G. A. JOHNSON, D. V. M., Inspector B. A. I., Sioux City, Iowa.

Read before the Sioux City Valley Medical Association, January, 1899.

In preparing, for your consideration, a paper on "Tuberculosis, its Control and Eradication," I appreciate the fact, that to treat the subject systematically and thoroughly would be to compile volumes, instead of a paper, appropriate for such an occasion as this. Therefore, I shall but briefly consider some of the more salient and important phases of the subject.

Reasoning from the premises that tubercular lesions, wherever found, are the results of the action of the tubercular bacillus; and, further, that the tubercular bacilli from whatever source, be it man, the dumb beasts, fowls or fishes, is one and the same organism.

I contend that the affection is transmissible from one species to another, or the others, under favorable conditions. In order to more fully substantiate this view, let us briefly consider this germ :

From whatever animal the tubercular bacilli are derived they present analogous if not identical points as follows : 1st, morphology ; 2d, staining peculiarities ; 3d, vitability and destructability ; 4th, the lesions produced ; 5th, the tendency to a slow evolution of the morbid process ; 6th, the character of artificial cultures ; 7th, the character of the chemical compound, tuberculin, formed by the germs in their evolution ; 8th, the ability to adapt itself to its environments ; 9th, the result of inoculation.

At one time it was contended that there was an essential difference between the tubercular bacilli found in the avain and bovine species, but recent experiments have demonstrated this to be erroneous.

This apparent difference beautifully illustrates the ability of this organism to adapt itself to its environments. One of the principal differences in this case, so far as this organism is concerned, is the normal temperatures of the bovine species, about 101° F., and of the avain species, about 107° F.

It is a well established fact that the tubercular bacillus has marked powers of resistance, under various conditions as to heat and cold, dryness and moisture, and as shown by its resistance to chemicals, and the wide range of species that fall victims to its ravages.

From this standpoint it might at first sight appear very unreasonable to advocate the idea of eradicating or even controlling such a widespread malady. But from a practical standpoint it does not assume such a magnitude.

While it is a fact that none of the higher animals are absolutely immune, the majority of species are so rarely affected that in attempting to devise ways and means of controlling or eradicating the disease, we need pay but little attention except to the two species, man and cattle.

I will not go so far as to say, as some have, that where there are no cattle there is no tuberculosis, but I will venture this assertion that could we eradicate the disease from man and the ox, and keep them free from it, that it would be but a matter of time when tuberculosis would be known in history only. And if we could eradicate the disease from cattle we would certainly have obliterated one of the greatest, if not the primary source of infection.

We have but little trouble in securing the enactment of laws and regulations for controlling the spread of diseases that are actively contagious and run a rapid course. But with tuberculosis the conditions are different; the most complicating phase of the entire subject is the slow and insidious character of the disease.

As you are all familiar with tuberculosis as found in the human patient, I will confine my remarks to a brief consideration of the disease as found in cattle.

Tuberculosis of the ox is one of the oldest diseases mentioned in veterinary literature, and to-day it is the most common. Laws forbidding the use of the flesh and milk, and providing for the destruction of affected animals, date far back in the middle ages.

The opinions of the medical fraternity regarding the cause and nature of the malady have varied greatly at different periods, and very largely influenced the laws and regulations in vogue. From the sixteenth to the eighteenth century, the disease was held to be identical with syphilis in man, and stringent measures compelling the destruction of tuberculous animals, so far as known, were enforced. But when this view was proven erroneous the laws were annulled or modified.

During the present century sentiment again turned against the disease, and much progress has been made, especially since 1882, when the celebrated Dr. Robert Koch, by his discovery of the tubercular bacillus, placed the subject on a sound basis.

ETIOLOGY.

The direct or primary cause is the tubercular bacillus, while

the indirect or predisposing causes are many, among which may be mentioned the surroundings, such as poorly ventilated, poorly drained stables, confining too many animals in a limited space, in-and-in breeding, the over-production of milk, and in fact any condition that tends to vitiate the germicidal property of the blood.

The principal modes of infection are, inhalation of the germs suspended in the air, and alimentation of substances contaminated with the germs, as the flesh and milk of tuberculous animals, especially the latter.

PATHOLOGY.

Whenever a sufficient quantity of live tubercular bacilli find a lodgment in any tissue, they soon begin to multiply. Their presence and activity act as an irritating foreign body, which nature endeavors to remove or limit through the process known as inflammation; this results in the formation of small granular bodies, known as tubercles; these coalesce and form masses varying in size from that of an ordinary pea to a mass two or three inches in diameter; degenerative changes within the tubercle take place early, so that the older tubercle is composed largely of a disintegrated mass that contains more or less lime salts.

In the ox, the tendency is to the formation of a strong, thick, limiting membrane, which tends to prevent the formation and escape of liquid pus.

The germs may find lodgment and produce morbid lesions in any tissues of the body, but the lungs and the lymphatic system are the most common seats of the disease, while the muscular and adipose tissues are rarely affected.

SYMPTOMS.

The symptoms must of necessity vary according to the seat of the affection. Owing to the slow and insidious character of the disease, the absence of fever, the inability of the ox to make known any minor aches and pains that it may suffer, and the slight interference with the normal functions of the various organs of the body, it is almost an impossibility to physically

detect the disease in the earlier stages. In fact, no positive diagnosis can be made on physical examination except in the latter stages of the disease.

Large numbers of cattle, that are sleek and fat, and apparently in the best of health, are found on slaughter to be affected with the disease in a generalized form, even to such an extent that it seems almost a miracle that the animal could live at all, let alone being fat and sleek of coat.

If the lungs are affected, there may or may not be an accompanying cough. There may or may not be an enlargement of the lymphatic glands lying near the surface of the body and accessible to digital examination. All of the authorities who have written on this subject except those having written during the past three or four years, have given a long list of symptoms whereby the disease could be diagnosed; such as, a dull short cough, which is more frequent after feeding, drinking or movement (as are most coughs affecting cattle); labored respiration; loss of appetite; loss of flesh; paleness of the mucous membranes, staring rough coat; diminution of milk secretion; debility, and, lastly, but by no means least, the surroundings and history of the case. But we should remember that the majority of these symptoms are not manifest until the disease has nearly run its course.

As regards the control or eradication of tuberculosis in cattle, very little can be accomplished by relying upon physical diagnosis; about all that can be done by this method is to destroy the advanced cases a little sooner than nature would accomplish the same end. For these reasons very little progress was made until within the last decade.

You all remember what a thrill of excitement spread over the entire civilized world when Dr. Koch announced that he had hopes to believe that he had discovered a cure for tuberculosis. With what eager expectancy many physicians secured some of the magic fluid, and how deep was their chagrin to find that a reaction, that is, an hyperthermic condition and other nervous phenomena, followed each injection in the tubercular patient. It

was early demonstrated that, as a curative remedy, tuberculin is a failure. But the hyperthermia that constantly followed its administration to tubercular patients, suggested its use as a diagnostic agent for tuberculosis. These indications were eagerly followed by many investigators who were interested in the control of tuberculosis in cattle, and who had up to that period been baffled because of their inability to diagnose the disease in its earlier stages.

During the last few years the action of tuberculin on cattle has been studied in thousands of cases by many of the best investigators of the day, all of whom pronounce it one of the most reliable diagnostic agents in the category of medicine.

By the proper use of tuberculin it can be determined to almost an absolute certainty whether an animal is or is not affected with tuberculosis.

Yet we are not making the progress that we should towards eradicating or even controlling the spread of this disease.

There are two reasons for this state of affairs; firstly, the ignorance of the general public upon this subject; and, secondly, the fear of financial loss by many of those who have a knowledge of the conditions. The first steps to be taken if we would accomplish any permanent results, is the education of the general public to a just appreciation of the dangers that constantly attend any spread of this disease, and the enactment of equitable laws bearing on the subject.

THE POSITION OF THE PHYSICIAN.

As physicians you have it within your power to wield an immense influence for good or for evil along both these lines. Good results would soon be manifest if each physician would, at opportune times, discuss this subject with his patrons, pointing out to them the dangers of the use of the meat and milk of tuberculous cattle, and suggest that milch cows should be tested with tuberculin as a protection to the public, and especially the family, and to prevent further loss to the herd by the spread of the disease.

It has been my experience that where people have become

fully acquainted with the facts regarding the transmissibility of tuberculosis that they are anxious to have their cattle tested; especially is this the case where the family is supplied with milk from one or two cows of their own.

As regards legislation, the physician whose acquaintance will permit can do more or less good by socially discussing the subject of tuberculosis with any member of the state legislature. These men must be educated along these lines before they are capable of enacting just laws.

LAWS.

What we should have in the way of legislation is a law that will provide for thorough and competent meat and milk inspection. The meat inspection should include market inspection relative to sanitary conditions and abattoir inspection similar to that maintained by the federal government.

The dairy inspection should provide for the tuberculin test and for thorough inspection of the cows at frequent intervals; the sanitary condition of the stables; the food and water supply; the cleanliness of the milk utensils and the health of the attendants.

From a sanitary standpoint, any regulation that does not provide for the proper inspection of the cow must of necessity fall far short of perfection. If the milk is contaminated when drawn from the cow it will go to the consumer contaminated. It should prohibit the use of the milk of cows that are affected with any disease, as tuberculosis, anthrax, variola, etc., that will render the milk unwholesome. No person suffering from scarlet fever, typhus fever, tuberculosis, etc., should be permitted to work with the cows, or handle the milk or milk utensils.

The practical object of such a law would be to prevent the use of the food products of tuberculous animals, because it is by far the most common of bovine diseases.

Much more could be accomplished through the State Veterinarian's office under our present laws, if the legislature would only appropriate a reasonable amount of money for this department.

DISPOSITION OF TUBERCULOUS CATTLE.

The disposition of tuberculous cattle, as revealed by the tuberculin test, is a very important matter, both from a sanitary and financial standpoint. At the present time the two systems most in vogue are, first, the Bang or Danish method, by which affected animals are kept isolated for breeding and dairy purposes. By this method the calves are taken from their dams and reared on the milk of healthy cows, and the milk is pasteurized; that is sterilized, and then placed on the market. While by the second method all affected animals are immediately destroyed and the owner compensated for them. In other words, the authorities buy the affected animals of the owner and then destroy them.

It occurs to me that a combination of these two methods affords the best solution of the problem. In case of animals valuable for breeding purposes, follow the Bang method, while common stock could be isolated until fat enough for market, then slaughtered under strict inspection, where those that were so slightly diseased as not to affect the meat for food would be passed and those where the disease had advanced to a degree to render the meat unwholesome would be destroyed. By this method the owner would receive what his cattle are actually worth, and the authorities would be relieved of a great financial burden. Immediate destruction is the only remedy for advanced cases.

Is the disease in cattle increasing in this State (Iowa)? Most assuredly it is. A few years ago it was rarely seen on post-mortem, now it is frequently seen, while the tuberculin test has demonstrated that as high as 60 per cent. of some herds are tuberculous. Some authorities claim that under the sanitary precautions now in vogue relative to tuberculosis in the large cities, the disease has decreased 36 per cent. in man during the last ten years, but no estimate is made as to what per cent. of this decrease is due to such meat and milk inspection as is now in force in most of the larger cities.

The seat of the morbid lesions as an indication of the mode of infection.

I am of the opinion that too much credence is given to the theory that the seat of tubercular lesions are indicative of the mode of infection.

If we reason from analogy it is at once apparent that the theory is misleading. Take for illustration small-pox, measles, mumps, Asiatic cholera, bubonic plague, yellow fever, etc.; these are bacterial diseases that are transmitted by inhalation, yet in none of these diseases are the morbid lesions confined to the air passages or the lungs; in fact, these organs are not affected except as a complication of the disease proper. Again, syphilis is communicated by cohabitation, yet the morbid lesions are not confined to the generative organs; while anthrax and black-leg of cattle are usually transmitted through contaminated food, but the morbid lesions are not confined to the digestive system.

On the other hand, laboratory experiments do not fully agree with this theory.

Why should this theory apply to the tubercular bacillus so much more forcibly than to most other organisms of a similar nature? While the solution of this phase of the subject remains to be worked out, there are, at present, but few reasons except theory for asserting that pulmonary tuberculosis is always the result of an infection through inspiration.

Up to the present time meat inspection has received more attention than has milk inspection. But I am of the opinion that milk is a greater factor than meat in the transmission of tuberculosis. My reasons for this view are, first, that the milk frequently contains the germs, especially when the udder is tubercular, whereas the muscular tissue is rarely affected; and, second, that meat is usually cooked before being eaten, whereas large quantities of milk are consumed in the raw state, especially by children and invalids.

I do not deem it advisable to treat this matter in such a manner as to create any widespread alarm, thereby causing unnecessary anxiety; rather take a little more time and stand on a firmer basis.

In conclusion permit me to again mention the important

position you occupy in relation to this snbject. As physicians are you not to a certain degree guardians of the public health, and is it not a duty incumbent upon you to educate your patrons to a just appreciation of the dangers that lie hidden from view in the meat and milk products of tuberculous cattle?

In compiling this paper I have consulted such authorities as were at my disposal.

A NEW TREATMENT FOR AZOTURIA IN THE HORSE.

By W. A. McClanahan, D. V. M., Redding, Iowa.

This is a disease that I have studied a great deal, because I was convinced that all old-line treatments did very little, if anything to check the progress of the disease. The only good it did was to keep the excretory organs open, so as to get rid of the poisonous principle, whatever it might be, as fast as possible.

I always dreaded to have a man come into my office and give me the symptoms of a case of azoturia, as I do with any disease that we have no successful treatment for.

I read with much interest the article in the February number of the American Veterinary Review by Prof. Lignière, on the new theory of the cause of this trouble. And as Schmidt's treatment has proven to us that we were mistaken in the cause of parturient paresis, I thought we might be also mistaken in the cause of azoturia. I was much disappointed that Prof. Lignière did not have more for us on treatment.

So I began to think what I would do in my next case. I thought that if it was caused by a germ in the subarachnoid space, an internal antiseptic would be indicated. So I decided to give potassium iodide in large doses for its antiseptic effect.

It was but a few days when an opportunity came to try it. It was a horse that had taken azoturia while going home from town. The owner lived about one mile out. It came on about

6 o'clock P. M. I could not go then, but gave the owner some old line treatment and instructed him to let me know if no better in a few hours. I was called out to see the animal between 9 and 10 o'clock P. M., and found it able to rise with some help, but it would not stand long. The owner said it was getting worse fast. From my past experience I decided there was very little hope for it. I drew the urine and gave four drachms of pot. iodide in about eight ounces of water as a drench. In about fifteen to twenty minutes that distressing appearance, common to all bad cases, disappeared. I left four drachms more of pot. iodide, with instructions to give it about 4 A. M. if worse. The animal was better, so the dose was not given until 7 A. M. From that time the animal made rapid progress, and in two or three days it was at work again.

The next case was a fine horse in the feed stable here, being prepared for market. It took azoturia while it was being exercised about town. I was called as soon as it was noticed. It showed very distressing symptoms. I immediately gave four drachms of pot. iodide in eight ounces of water as a drench, and drew the urine. In fifteen minutes the animal began to get easy. In four hours I repeated the dose. In twelve hours it was hard to tell that the horse had been sick.

The third case had been ridden about one and a quarter miles after the first symptoms appeared, and I did not see it for about two hours after it first took sick. I gave four drachms of pot. iodide. The horse began to get easy in fifteen to twenty minutes. I had the dose repeated in two hours. The next day the horse was taken home. All of these cases made very rapid recoveries.

Now, three cases are not enough to prove the treatment a specific, but with such results as I had, compared with ordinary treatment, proves to me that there is something in it. And as I do not have many cases of this in a year I report it so that others can try it, and I hope every one who does so will report either to the REVIEW or to me, so that we can compare notes and if it is a success, perfect the treatment.

VETERINARY INSPECTION OF BREEDING STALLIONS.

By W. L. Williams, V. S.,

Professor Surgery and Zoötechnics, New York State Veterinary College.

Paper read at the National Horse Breeders' Meeting, at Chicago.

Civilized governments throughout the world have always endeavored by special or what we might call "class" legislation, to afford certain protection or bestow more or less important favors upon agriculture, because from this source civilized man draws his first prime necessities of life, food and clothing.

In its widest sense, agriculture includes the breeding and rearing of plants and animals, the first being fundamental and necessary to the existence of the latter.

The complexity of agricultural operations gradually increase from the lower plant production to the highest forms of domesticated animals, the pinnacle of agricultural pursuits being reached in horse breeding.

Modern advancement in locomotory devices has only served to elevate horse breeding to a yet higher plane, steam, electricity, and other mechanical forces tending rapidly to eliminate the lower classes of horses, or render them valueless without materially affecting the usefulness of the higher types. Recently there was abundant demand for any type of horse, so that a breeder could sell inferior animals at remunerative figures and the higher classes at a great profit. Now, the breeder cannot find market for culls, and needs rely wholly upon superior animals, and the production of these with sufficient uniformity is the task at present facing him.

The ideal breeder's horse of to-day is an animal of the genus equus, possessing a sufficiency of power, speed, endurance and beauty, combined with a degree of intelligence fitting him to largely accomplish his work without detailed human supervision, and capable of becoming a sympathetic friend and companion to man. With the latter qualities, steam, electricity and compressed air do not enter into competition, but the destruction of value of low grade horses increases the complexity of

breeding and renders horse breeding by far the most difficult of all agricultural pursuits, and correspondingly it offers to the successful breeder the greatest pleasure and profit.

It affords the freest field for the application of human intelligence to the production of an animal pre-eminent in beauty of form, symmetry of motion, endurance, obedience, intelligence and affection.

It would at once appear that if national aid be advisable for the promotion of agriculture, horse breeding should be highly favored as compared with other branches of agricultural industry, and so we find many European nations maintaining permanent breeding establishments, not only for keeping up directly the quality and number of horses within the realm, but as a great object lesson and educator to civilian breeders, and to this they add official inspection of private stallions, approving under various plans only those which are worthy. The value of official approval of stallions, when properly and intelligently applied, must appeal to all.

So far as we know it has scarcely been attempted in this country, and what has been done has been fragmentary and of little or no enduring value.

Horse shows have at times employed veterinarians to superficially inspect and exclude diseased animals from the show ring, and some agricultural fairs have resorted to a similar plan, yet notoriously defective animals are permitted to compete for and carry off important prizes, though their defects are transmissible to their progeny.

A weak provision in many prize lists directs that no unworthy animal shall receive a prize. The unworthy animal has no right in the show ring nor in the show stalls, unless conspicuously labeled "defective."

If such abuses prevail at shows and fairs, which are intended as popular educational institutions, how much more mischievous is the free license to use any stallion for public stud service without regard for individual merit or ancestral history, and yet the only way to curb these official abuses is by proper inspec-

tion of such a character that approval will be worthy of and command public confidence, and the absence of it will diminish or destroy the power for evil in the defective animal.

Much remains to be done ere official inspection can be rendered widely applicable.

Whatever other judgment need be exercised in selecting a breeding stallion, it is pre-eminently important that he should be inspected as to soundness, and his ability to beget progeny capable of performing their destined work without becoming unsound.

Evidently this work should be performed by a veterinarian.

Generally his labors are limited to saying that a horse is "sound" or "unsound," so that a defective stallion with a curby hock which he will transmit to his progeny, but which in his own case has been tenderly guarded by permitting little or no hard work, is passed as "sound" and permitted to compete, while a well-formed hock, which owing to some overwhelming strain has developed a small curb, is called "unsound" and barred from the breeding ring.

Numerous parallel cases could be cited to show that a stallion should be barred from show ring and from stud, not because of unsoundness, but because his progeny when worked, will probably be unsound.

In providing official veterinary inspectors for breeding stallions, the first obstacle confronting us is the scarcity of competent veterinarians for the work.

Many of our veterinary schools draw their students from uneducated classes, and after a hurried course of instruction of eleven or twelve to eighteen months actual attendance at college, graduate a man who it would require the labors of an expert commission to determine if he were a veterinarian or a horse doctor. They have had neither theoretical nor practical training in the higher science of zoötechnics, their time having been all consumed in a hurried cramming of data upon the symptoms and treatment of disease.

Agricultural colleges have done something to aid, but could

do no more. They are maintained at National and State expense and are required to teach agriculture, including the physiology, hygiene and diseases of domestic animals.

While several of these colleges maintain excellent courses of instruction in the breeding and handling of cattle, sheep, swine and poultry, and keep high-class animals on the farm to serve as object lessons, no such plan with regard to horse breeding has been brought to our notice.

Our preceding remark that horse breeding is the most difficult of all agricultural pursuits may serve to explain in part.

In recent years few veterinary colleges, having courses of three years of nine months each and requiring of students high academic training before admission, have been founded, notably in connection with great universities, where by amalgamating agricultural teachings on stock breeding with zoötechnics from the standpoint of the veterinarian, joint courses have been instituted which will in time accomplish good results, though lacking yet the material for object lessons in the science of horse breeding.

If the nation or some of the states would found well-appointed studs in affiliation with agricultural colleges and under scientific veterinary supervision, much could be learned and taught which would exert a lasting influence on horsebreeding in the United States, and would perhaps do more than any other force to render effective the official inspection of breeding stallions.

With such material for object lessons, a course in horse breeding could be devised consisting, besides other fundamental instruction, of history of breeds, the influence of food, climate and soil upon size, form, endurance and decay ; of defects which tend to be transmitted from parent to offspring and which would probably interfere with the latter's usefulness ; which diseases or defects are hereditary, which are not.

Many people are not aware of the utter confusion prevailing as to which diseases are hereditary and which are not.

The so-called "moon blindness" is generally said to be hereditary, but if an affected animal, not yet blind, be transferred

from the Mississippi Valley to the Rocky Mountains, it recovers, and its progeny fails to "inherit" the malady.

Rickets may cause ringbones and spavins in progeny of the best horses extant, but place the affected animals under non-rickety environments and their progeny do not inherit spavin. Yet careful study would probably show that heredity frequently exerts an influence in producing blindness and spavins. Which of the blind, spavined or ringboned animals are "sound" as breeders remains to be determined, and these questions should receive due investigation. If we by ignorance or abuse render an animal "unsound," the justice would be more poetic if the owner were barred from the breeding of horses, rather than that the wronged animal be condemned, and to a degree such a breeder excludes himself by making his efforts financially burdensome.

By a determined effort and hearty support efficient inspectors could soon be procured.

The chief objects to be attained by efficient veterinary examination of stallions would be to encourage the use of high class sires and to repress the inferior ones.

With many special breeders official approval of stallions by competent inspectors is quite superfluous, as they already know fairly well a good horse.

But the great mass of horses are and must always be bred and raised by farmers who keep but few mares and put them to the double use of breeding and working. This is the economical method of breeding, as the colt at weaning time has cost the owner but little beyond the stallion fee. It is to this class that the guidance of the efficient veterinary inspector is of greatest advantage. As a class, these farmers are not good judges of stallions—they see too few of them and study the subject too little.

In the recent horse-breeding craze, they like many would-be professional breeders, were led astray in many ways.

Among some breeds the fact that a sire had been "imported" was a sufficient guaranty, though the animal might have been

"imported" from an adjoining county and given a French, Scotch or Belgian name, as might best suit the conformation of the horse or the whim of seller or buyer. Many believe that any stallion grown in France or Scotland and having made the trip across the Atlantic, was good enough for breeding purposes and required no further guaranty.

Many horses unfit for working purposes in France were sold cheap by their owners and shipped to this country to "improve" our stock, and on that account admitted duty free.

Proper veterinary inspection should exclude these, either at the port of embarkation or the port of entry, and no stallion permitted to enter from a foreign country except upon such examination added to any pedigree qualifications which it might be fitting to impose.

In this way we would prevent imposition upon breeders, as well as the evasion of tariff laws. Not only should a defective stallion not be permitted to enter duty free, but he should not be allowed to enter at all.

Equally gross errors occur in home bred animals, even in the trotter, which is purely American. Because of illustrious ancestors, however remote, a stallion was thought qualified as a sire, regardless of defects which would totally unfit him for any legitimate use in this country where beef is cheap. During the recent boom, trotting stallions with long pedigrees were kept for public use at such figures that had he been castrated and placed upon the best markets of the country, would not have sold for the price of four service fees.

Some laws have even been enacted, permitting such stallions a state license upon pedigree alone, thus entrapping the state into a quasi approval of the animal wholly upon pedigree, though bearing serious defects which would unavoidably be transmitted to his offspring.

In our judgment then veterinary inspection of stallions should be based primarily upon the fitness of such animals to sire sound foals, which would remain sound at their allotted work.

The details of a plan would vary in different communities.

The element of soundness or absence from grave defects should be made a part of an animal's pedigree, and so far as practicable veterinary inspection should begin early in the career of a foal destined as a breeding stallion.

This may seem superfluous to some, but a few illustrations will make the desirability clear.

We not infrequently see young foals with scrotal or umbilical herniæ, (scrotal or navel rupture) which in some cases persist and lessen the animal's value greatly, and at times compromise its life. These tend to disappear with age, so a stallion of breeding age may be apparently free, but his get will very probably show his defect.

The same is true with cryptorchids or " ridglings," the hidden testicle sometimes passing down to its natural location at two or three years old, but the defect is nevertheless present in the constitution and may be transmitted, rendering colts difficult of castration and multiplying ten-fold generally the cost of that operation.

The only way to avoid these consequences to the greatest degree is to know the condition of the parent as a foal, and let such defects become a part of its ancestral history.

In other cases disease or defects may develop or become apparent with age, rendering veterinary inspection of the mature stallion no less indispensable, and indicating that such inspection should have as wide a range as possible in the life of the animal, and during his active breeding career should be frequently repeated. By somewhat frequent veterinary inspection, the spread of contagious diseases from stallions to mares may at times be limited or prevented.

We would suggest as an outline for a foundation for efficient veterinary inspection of stallions :

The encouragement of higher, more technical education in relation to horse breeding, illustrated by well appointed breeding studs, under efficient veterinary supervision, the results in these studs as to fecundity, soundness, excellence and longevity to be fully published.

The appointment by proper authority of official veterinary inspectors of high education and efficiency, and clothing these with ample power to do effective service.

The exclusion of defective breeding stallions from foreign countries by rigid inspection at ports of entry.

The periodical inspection of all breeding stallions, whether of domestic or foreign origin, and the prompt condemnation of all such as may at any time develop defects or disease which may be transmitted to their progeny.

The procuring of such breeding laws as will favor the use of approved stallions, either by a state subsidy to them or the exclusion of condemned stallions from public service, or by a sufficient per capita tax upon the defective animal, with freedom from such taxation upon the approved animal.

The exclusion of defective stallions from horse and agricultural fairs, allowing them neither in show ring nor in show stalls.

Such a scheme, we believe, would tend to the diffusion of knowledge regarding the science of horse breeding, and would found an authoritative and reliable standard by which non-expert horse-breeders could measure the value of a given sire.

We have already established precedents for laws regarding the repression of undesirable breeding animals, there being at present in many states a differential per capita tax on dogs, males and spayed females, carrying a minimum tax, while entire females, which are undesirable for social or economic reasons, are required to pay a maximum tax, in order to discourage the keeping of inferior and improperly cared for animals, and thus tend to limit the production of inferior dogs.

NOTES ON HERMAPHRODITISM.

By G. W. Butler, V. S., Milwaukee, Wis.

Thinking the following notes on an hermaphrodite would be interesting to the readers of the Review, I herein enclose them for publication:

A bovine, about two years old; head resembled that of a bull-stag; possessed the desires of a bull, and was reported as having been a nuisance when running with female cattle. The external genital organs, however, resembled those of the female, with some peculiarities worthy of note:

At the inferior commisure of the vulva there was a projection which directed the urine upward as it flowed from the animal and proved to be a false penis, the end of which presented two false openings about an inch deep, they being divided by a prominence, the whole resembling to some extent the penis of the horse. The animal being killed for beef the following abnormalities were found:

The false penis was composed of dense fibrous tissue and was doubled and rolled upon itself and firmly attached to the ischial arch. When the tissue which held its folds together was severed and the organ stretched out it measured about eight inches in length. The opening into the vulva and vagina was only large enough to admit the index finger, and the length of these two organs combined was only three and one-half inches, the meatus urinarius being at the extreme anterior part of the vagina, immediately below the os uteri. The body of the uterus, including the neck, was one inch in length and each horn extended three inches from the body to a lobulated mass which represented the ovaries. There was no line of demarcation between the horns and fallopian tubes and the tubes led directly into the lobulated ovaries, and divided into numerous small channels, which branched off at right angles. In the abdominal cavity, near the internal inguinal ring, embedded in fat, were two testicles, which were about the size of a small hen's egg and nearly normal in appearance. The tunica albuginea and epididymus were quite normal, but the tissue proper was darker in color and softer than the normal. The cords, which were composed of a fibrous and mucous coat, the latter being corrugated, extended from the testicles to the body of the uterus, entering very near to where the horns branched off. They were extremely small near the testicle, not larger than a small knitting needle, in-

creased in size to their middle, and again became smaller as they approached the uterus. I think they were pervious throughout their entire length, although the channel representing the vas deferens was so very small that it was difficult to follow it. The vesiculæ seminalæ were absent.

MODERN VETERINARY PRACTICE.

By M. H. Reynolds, M. D., V. M., Minneapolis, Minn.

Read in the Section of Medical Education, Jurisprudence and State Medicine of the Minnesota State Medical Society, June 21, 1899.

It is not my intention to argue that young men should study veterinary medicine in preference to other professions. Some young men are especially adapted for the practice of law, others for the practice of human medicine and still others for the practice of veterinary medicine, and every young man should take up the profession which he conscientiously believes to be the one in which he can do the greatest good for society as a body, and himself as a unit. I beg leave to explain one other point in connection with this paper, viz.: that I have preferred to use common terms whenever the technical term was strictly veterinary and would not be well understood by a majority of physicians in human practice.

Young men are occasionally deterred from the study of veterinary medicine by a fear that they would not be so highly thought of in the community as if they studied human medicine or law or theology.

I became convinced years ago that regardless of profession or business, providing it is an honorable one, men are usually given about the social rank and recognition that they deserve. If a lawyer or physician is uncultured in speech and ungentlemanly in manner he is ranked as a boor, regardless of the fact that he is a member of a highly honored profession. If a veterinarian is well educated and a gentleman he is recognized as such. I know plenty of veterinarians in this State who are so recognized and treated, and I am personally acquainted with

veterinarians all over the United States who are recognized as scholarly gentlemen.

Veterinary Education.—In 1890 the two years' course was common all over the United States and Canada. There were but few exceptions. The change to a three-year course was so rapidly made during the early nineties that within a few years there were but two veterinary schools of any prominence in the United States or Canada that granted diplomas at the completion of a two years' course. I can best illustrate veterinary education in America by taking one of our good schools and discussing the course of study and facilities of the institution. The youngest veterinary college of any prominence in America is the New York State Veterinary College at Cornell University, New York. On the faculty list of this institution occur such names as Pres. Schurman, of the University; Dr. James Law, famous alike in America and Europe as a practitioner, student and author; Dr. W. L. Williams, one of the most prominent members of the American Veterinary Medical Association, and well known throughout the United States and Canada; and Dr. V. A. Moore, whose work as bacteriologist in the study of hog cholera has made him famous. This institution is located at Ithaca on the campus of Cornell University. The buildings which belong exclusively to this institution are seven in number. I fancy that many of the medical men attending this association meeting would be surprised if they were to visit the amphitheatre operating room, and note every convenience and appurtenance that goes with modern surgery; or the dissecting rooms and note the precautions that have been taken to secure all the desirable features which belong to a modern dissecting room; or the hospital and note how perfectly the conditions meet the requirements, for instance in the infectious disease ward; or the pathological and bacteriological laboratories and note the splendid equipment.

Candidates for admission into this school must possess the preliminary education represented by a course requiring at least forty-eight regents' counts in a registered academy or high

school, or a preliminary education that will be accepted by the regents as fully equivalent. The regents will accept as equivalent a "baccalaureate degree from the academic department of any college or university of recognized standing." There are several equivalents which will be accepted; but they all require that the students shall come to this institution thoroughly prepared. I think the entrance examinations would satisfy the most fastidious committee on medical intelligence and education.

During the first year the students take up inorganic chemistry, anatomy, microscopy and histology, embryology, comparative physiology, breeds and breeding, dissection and the usual laboratory work; second year: organic and physiological chemistry, anatomy, comparative physiology, therapeutics, medicine, surgery, obstetrics, jurisprudence, sanitary science, bacteriology, the usual clinics, dissection and laboratory work; third year: medicine, clinics in medicine and surgery, surgery, zoötechnics, toxicology, sanitary science, pathology, meat inspection, research work and thesis.

In addition to our colleges there are other important factors to be considered in connection with modern veterinary education. Nearly every State in the Union having within her borders a reasonable number of veterinarians, has state and local veterinary associations which meet regularly and discuss professional matters just as do similar associations of physicians. For 35 years we have had a national association. Last year we decided to enlarge and the name was changed from the United States Veterinary Medical Association to the American Veterinary Medical Association. None but graduates of colleges which furnish satisfactory courses of at least three years are eligible to membership.

Our current literature is abundant.

But after the young man has finished the high school, academic or collegiate course and then this prescribed veterinary course and graduated, what does the world offer him? What business prospects or what opportunities to gain reputation are

there to justify the time and expense involved? It is not my intention to paint the prospects for a young veterinarian in untrue colors, for every intelligent veterinarian and stockman knows that veterinary practice during the past few years of depreciation in live stock values has not been extremely attractive; but the stockmen themselves, the business men in our great cities and possibly my medical brethren have suffered something from this same condition. There is a veterinarian in Chicago whose income from actual practice is estimated at from $40,000 to $60,000 a year. A private veterinarian's practice right here in Minneapolis during more prosperous years was actually worth from $10,000 to $13,000 for years in succession. Another practice in St. Paul netted nearly as much.

The present ratio is three farm animals to each human being and less than one veterinarian for each ten physicians. The live stock valuation in the United States is estimated at $2,000,000,000. Two hundred and fifty millions dollars' worth of live stock is sold annually in Chicago. I give these figures to illustrate possibilities, not for the purpose of giving an impression that veterinary practice is a universal bonanza, for there are plenty of practitioners in veterinary as in human medicine who can scarcely keep their laundry bills paid.

The Government Bureau of Animal Industry is now offering positions for veterinarians as meat and live stock inspectors at the great slaughter-houses and ports of entry or shipment. Bureau inspectors must be graduates of recognized veterinary colleges. It has been so ordered by Congress. The Government is already employing a large number of trained veterinarians in these capacities and this work has only begun. To illustrate the development of this field it is only necessary to bear in mind that the increase of meat inspection alone was from less than 4,000,000 animals in 1892 to 26,500,000 in 1897. In 1898 there were over 51,000,000 animals inspected ante-mortem, and over 30,000,000 animals inspected post-mortem.

In nearly every State and territory there is a position for a state or territorial veterinarian or an officer with equivalent du-

ties, and a number of deputies. Many of our large cities have city veterinarians in constant employ. There are places in our agricultural colleges and experiment stations for veterinarians who have a taste for work as teachers and experimenters.

Veterinary Sanitation.—Recently the bacteriology of pleuropneumonia has been cleared up by the discovery of a microbe so minute that our most perfect microscopes are unable to define it for the observer. Competent bacteriologists pronounce the work in this case as free from flaws and there is apparently no reason why we should not accept it. If the specific germ of one disease is too minute for microscopic study, there may be many others. There are several diseases of domestic animals, the specific cause of which has persistently eluded the bacteriologists and it is possible that in this we have an explanation. New methods of bacteriological work may now solve these hitherto impossible problems.

Texas Fever.—The history of Texas fever presents another triumph. It has been but a few years since the origin and nature of this disease was a mystery. It is difficult to give a definite idea of the seriousness of this disease. Practically all of the cattle in the United States, south of a certain line, are either affected by it or have been rendered immune by infection while young. Southern cattle could not be shipped north for pasturage or market except during cold months. Northern cattle could not be shipped south for the purpose of improving southern stock without almost complete loss. Great business interests were constantly disturbed and the loss to both southern and northern States was serious. We now have the etiology of this disease before us, as an open book. It has been proven very conclusively that the disease is transmitted in nature invariably by inoculation and the inoculation is done only by one species of the tick (boöphilus bovis). Southern cattle free from living ticks can therefore be shipped north without danger. Government veterinarians have been experimenting for some time with various dips for destroying the ticks so as to remove the last obstacle to the movement of southern cattle northward

at all seasons of the year. Not only that, but it is now quite apparent that young cattle may be immunized and be safely shipped into the Southern States. This means the possibility of improving the southern cattle, and you are doubtless aware of the immense cattle interests of the South, particularly of Texas and southwestern Louisiana.

Bovine Tuberculosis.—The problem of tuberculosis in the human family and among domestic animals is perhaps the largest, and it may prove the most difficult problem which medical men have ever been compelled to face. Dubard's discovery of tuberculosis in fish has been such a revelation that it is unsafe to even speculate concerning the limitations of this disease. Here we have a bacillus, varieties of which can exist in different animal bodies through a range of temperature of from 50 degrees F. in carp to 135 degrees F. in birds. Are there varieties of the bacillus of tuberculosis which are capable of altering from one to the other? Competent research work seems to indicate that this may be the case. If this bacillus can gradually adapt itself so as to thrive in a variety of animal bodies, whose normal temperatures vary from 50 degrees F. to 130° or over, then the possibilities as to distribution and saprophytic existence of this microörganism are almost bewildering.

Sanitarians in the field of veterinary medicine have taken hold of the problem, large as it is, and considerable has already been accomplished. But a few years have passed since we had the first positive information as to the specific nature of the disease. We now have a diagnostic test for the presence of this disease which is as nearly infallible as any method of diagnosis in the whole realm of medicine. It gives us positive evidence as to the presence of the disease, even when the lesions are very recent or slight in extent; and so far as known the errors that may be charged to tuberculin are nearly or quite all in cases that can be diagnosed on clinical evidence without the aid of tuberculin. Widespread interest in bovine tuberculosis has been aroused. Cattle breeders and dairymen are becoming informed as to the nature and extent of the disease. The views of

breeders, especially, have changed very much during the past few years. When tuberculin first informed us that a serious percentage of highly bred cattle was tuberculous it naturally aroused the opposition of breeders and owners. But as it became more and more evident that their cattle were actually diseased and that tuberculin was an accurate test as to the presence or absence of the disease, the more intelligent breeders naturally came over, and it is now safe to say that there are comparatively few cattle breeders in the United States or Canada who do not believe that bovine tuberculosis is seriously prevalent and that tuberculin is an accurate diagnostic. It is becoming rather common for breeders to purchase stock subject to test or with certificate of test. It is no longer necessary to found a herd of pure bred stock with tuberculous animals, and it is possible with the aid of tuberculin to free a herd from this disease. In view of recent work that has been done in Denmark and Germany and by experimenters in this country, it is very evident that it is not only practical but possible to breed tuberculosis out of a herd. This is based upon the demonstrated fact that a very large percentage of healthy calves can be reared from tuberberculous dams, providing the calves are removed from the mother soon after birth and reared upon the milk of healthy cows or upon the sterilized milk of the dams. It seems to be a fairly well demonstrated fact that tuberculous cows with diseased udders are apt to give infectious milk and that tuberculous cows with apparently sound udders may give such milk. It is now quite generally recognized that dairymen should not be permitted to sell milk which comes from untested cows for any city food supply, although comparatively few cities are making the tuberculin test a condition for issuance of license. Minneapolis was the pioneer in this and deserves great credit.

St. Paul has recently adopted an ordinance somewhat similar to the one in force in Minneapolis, and the work for that city will soon be well under way.

Chicago papers are discussing the matter. The veterinarians and physicians of that city are planning a joint meeting in

the near future to consider it. There is every reason to hope that a dairy inspection, which will involve the tuberculin test, will soon be in force in the great city of Chicago. Other cities will undoubtedly follow.

Permit me to explain the stand that has been taken concerning bovine tuberculosis in Minnesota State Board of Health work:

1st. That it is not practical under present conditions to insist upon an immediate tuberculin test of all cattle in the state.

2d. Whenever undoubted tuberculosis appears in a herd or any animal that has come from a given herd, that herd must be tested with tuberculin.

3d. Animals that react to the tuberculin test may either be immediately killed or continued under quarantine for a period not to exceed three months, at the end of which period they must be retested. If they react on second test, they must be killed under inspection within one month from date of second test. The State Board furnishes tuberculin free of expense. During the period of quarantine the sale of milk or other food products from quarantined animals is forbidden.

Other Diseases.—Symptomatic anthrax, commonly called black-leg, can now be prevented with almost absolute certainty by vaccination, the vaccine costing only about fifteen cents per head. Losses from this disease in the past, even in Minnesota, have been very serious. Further south and on the range country to the west the loss from this disease has been very heavy.

The same may be said of anthrax proper. Its bacteriology and general pathology are now well understood. We have a vaccine in quite common use that is very satisfactory as a preventive.

Hog Cholera.—It is safe to insist that during the present decade Minnesota has lost over a million dollars from hog cholera in one year. Iowa has lost several millions per year for several years in succession. The financial losses in Nebraska and other states have been enormous. The Bureau of Animal

Industry, or, in other words, the Veterinary Division of the Department of Agriculture, has now developed a vaccine which has apparently shown 80 per cent. of recoveries in hogs vaccinated, as against 20 per cent. for hogs not vaccinated. It is being gradually recognized that with thorough organization hog cholera can be quarantined successfully, providing the quarantine measures are instituted early in the history of the outbreak, and even when the disease has spread over a large territory, a well organized effort, backed by a good law, can accomplish a great deal toward gradual reduction and final eradication of the disease. Now that we apparently have a preventive vaccine, the problem of control looks still easier. To illustrate what can be accomplished, I have only to quote a few facts and figures from Minnesota records; and, by the way, Minnesota can claim the distinction of having been the first state to attempt the control of this disease by sanitary measures. In 1896 this state lost over a million dollars in dead hogs alone, saying nothing of other financial losses that necessarily accompany the loss of so much live stock. In 1897 the loss, as nearly as can be estimated, was less than one-half a million. In 1898 a similar estimate had placed the loss at less than one-third of a million, approximately $325,000. The reduction of territory invaded was from 354 townships invaded in 41 counties in 1897 to 93 townships in 32 counties in 1898. This has not been entirely due to natural conditions, for our neighboring states, Iowa, Nebraska and Wisconsin, report no reduction, and in some cases an increased annual loss during the same period.

We have in mallein a positive diagnostic for glanders, and it has revealed an unpleasant fact, viz.: that glanders is more prevalent than we had previously supposed. The public idea of a dejected looking horse that is discharging profusely at both nostrils, with great ulcers on the Schneiderian membrane and farcy sores on the body surface, is in some respects unfortunate, for it is difficult to get people to comprehend that a horse may be fat and show no marked symptoms of glanders and yet have the disease, and be infectious to other horses.

Surgery.—There are several operations commonly done by surgeons in human practice that we make no attempt to perform. Our patients rarely, if ever, have appendicitis, and the removal of this organ in the horse or cow would be a rather formidable operation, inasmuch as the equine appendix is about three feet long, with a capacity of seven and a half gallons. The cow has an appendix that measures about seven feet. It is scarcely possible in general practice to furnish ideal conditions during operation, and we cannot control our patients to the same extent after the operation.

Operations are usually performed as a matter of business as far as the owner is concerned. Sentiment does not play so important a part, but, after all, we have reason to be fairly well pleased with the veterinary operative surgery of to-day. An accurate knowledge of anatomy enables us to use cocaine as an aid in the diagnosis of obscure lameness. If we anæsthetize the sensory nerve supply to a certain muscle or ligament or an entire articulation, and the horse, which previously went lame, afterwards goes sound, we have fairly satisfactory proof as to the exact location of the injury. To illustrate: a patient recently came to the University Veterinary Hospital with a badly swollen ankle and a history of injury while training on the track several years ago. Examination easily demonstrated that trouble at the ankle was responsible for some of the lameness, but upon further examination I found an unusually bad case of thrush, and, while considering the advisability of a certain operation for relief, the question arose as to what part, if any, of the lameness was due to thrush. I cocainized the posterior digital nerves just below the ankle and noticed that the horse continued to go lame as before. I then cocainized the plantar nerves just above the ankle, and in from twelve to fifteen minutes the horse was apparently free from lameness. I had then located the trouble causing lameness. Veterinary surgeons are now doing quite a long list of neurectomies for the relief of lameness and the results are very satisfactory on accurately diagnosed and well selected cases. We are cutting the median

nerve on the upper third of the radius for the relief of lameness of the back tendons, ringbones and various foot troubles; cutting the plantar nerves, one or both, just above the ankle for ringbones, navicular disease, corns, etc.; the digital nerves just below the ankle chiefly for navicular disease. We do neurectomies of the anterior and posterior tibial nerves, for the relief of spavin and other forms of lameness in the posterior limb. We divide the motor branch from the eleventh cranial nerve to the sterno-maxillaris muscle, and the bellies of the sterno-hyoid and omo-hyoid muscles to prevent a horse from cribbing and cure the habit. The cunean branch of the flexor metatarsus tendon is frequently divided for the relief of spavin lameness. We have a new operation, arytenoideraphy, which is probably superior to the old arytenectomy for the relief of what is commonly termed roaring. We now drain the gutteral pouches, which in the horse are large expansions of the Eustachian tube, either by operating through the pharynx from within or by introducing a catheter through the nostril instead of the old hyovertebrotomy. Laparotomies are fairly common; for instance, in cryptorchid castration, ovariotomies, removal of foreign bodies from the alimentary canal, and volvuli.

Until recently, parturient apoplexy, commonly known as milk fever, was one of those diseases which every veterinarian was anxious to avoid. A call to attend a case of parturient apoplexy was very much like a call to attend a funeral. We now have a treatment that is apparently specific, based upon the theory that the whole train of peculiar symptoms is brought about by absorption of toxic matters from the interior of the mammary glands. This treatment consists essentially in the injection of an aqueous solution of potassium iodide into the milk ducts. Care is taken to do the operation with as thorough surgical cleanliness as possible.

We can now administer a cathartic and thoroughly evacuate the alimentary canal in twenty-five to thirty minutes by the hypodermic or intratracheal use of eserine sulphate, either alone or in combination with atropia or strychnine.

I have discussed veterinary education, veterinary sanitation, a few operations from the domain of surgery, and a few points in disease and treatment work, to illustrate something of what the modern veterinarian is doing. If the gentlemen of this association have gained new ideas concerning veterinary practice, or a broader interest in the great field of comparative medicine, I am content.

(*Reprinted from the "Reveille," Louisiana State University.*)

INTRA-OCULAR FILARIASIS.

By Dr. W. H. Dalrymple, Baton Rouge, La.

Although titles such as the above are not of weekly occurrence in the columns of *The Reveille*, readers need not be at all disconcerted, as this one simply refers to a thread-like worm or parasite in the interior of the eye. It might be in man, or a steer, or even an ass, but in the present instance it was only in a horse. All this explanation would, probably, have been uncalled for, had we stated, in plain everyday language, and without all these scientific terms, that the condition we desired to describe was nothing more nor less than worm in the eye; or snake, if you prefer looking at it through a magnifying glass. Or, in other words, if you would rather have it exaggerated just a little bit. But, as ours is an institution of learning, where scientific terms are in daily use, and where we are supposed to become familiar with, and know the meaning of, scientific phraseology, it would be too common-place to use the expression: worm in the eye, when we had recourse to such a euphonic and expressive appellation, as intra-ocular filariasis. Besides, we must not be so selfish as to want to keep all our scientific learning within the confines of the college campus. We must share the benefits of our information with our readers, so that, should any one of them, come across a worm in the eye of any animal, possessed of visual organs, including the genus homo, he may, if he likes, be so mediocre as to give it its common everyday name, but if he wishes to appear quite *au fait* in

the use of technical terms, as to the meaning of which he may be altogether "at sea," which is of daily occurrence, we would certainly recommend the more classic expression. As we have already stated, the patient, tendering hospitality to this rather irritating guest, was a horse. Possibly that was a misfortune, for the horse. Had he been a man, he would, of course, at once have sought a specialist, an oculist, who would, after successfully extracting the nematode, have presented a bill much longer, no doubt, than the parasite, and the operation have been considered something wonderful. Probably heralded all over the country as a most wonderful feat in ocular surgery. "Just to think of it, a living worm taken from the eye of a man, and yet the patient expected to live." Now it is different with the veterinarian. He rarely or never gets the credit for a delicate operation on the lower animal that the human surgeon does for similar work, although just as deftly performed. And why? Because the one is dealing with human life; the other, with that of one of the lower species, which is too often viewed, only, in the light of dollars and cents. The difference lies, then, not so much in the quality of the work as in the patient. A man may have one of his limbs amputated, and if it saves his life, the operation is a success. Not so in the case of the lower animals. Any operation, be it ever so skilfully performed, if it renders the patient unfit for work, it is a failure. We made the statement, that if this horse had been a man, he would have sought a specialist. Now the veterinarian has not, as a rule, the opportunity for specializing. The public expect him to be familiar with all branches of comparative medicine and surgery, so that if he can be called a specialist at all, he is an all-round specialist. He is forced to keep abreast of his professional work so that he can fill the office of the oculist, the aurist, the rhinologist, the dentist, the dermatologist, the gynecologist, the helminthologist, and all the other specialists in surgery and medicine. In operating for intra-ocular filariasis, he would then, of course, be doing the work of the oculist.

The patient brought to the veterinary department of the

university, February 4, was a little bay horse, about 14 or 14½ hands high, and with a decided leaning to the side of the type, "scrub." The small worm or parasite could be distinctly seen with the naked eye, our eye, swimming actively about in the aqueous humor which occupies the anterior chamber of the eye, just behind the cornea. The length of the filaria was about 50 millimeters, or in the neighborhood of two inches.

Before operating, all the instruments that were to be brought into use were rendered sterile by immersion in a 3 per cent. aqueous solution of carbolic acid. The front portion of the eye, the cornea, was anæsthized by the use of a 4 per cent. solution of cocaine. After all sensation was lost, the cornea was then opened with a delicate lancet, the incision being made to one side of the line of vision, and the watery humor allowed to escape. It was hoped that the parasite would be forced out of his temporary habitat by the flow of the humor, but instead, he wriggled to the opposite corner of the eye and became stranded from want of water to disport in, and by collapse of the cornea, so that our first incision was of very little use to us. Partly due to the influence of the cocaine, perhaps, and also to the collapse of the cornea, the worm became almost stationary, and a second incision was then made through the cornea, right down on to him, and which, by the aid of a delicate pair of forceps we were enabled to get hold of and extract successfully.

The horse belonged to a negro who took him home to the country, a distance of about six miles. He was given a prescription for a mild antiseptic and astringent collyrium (eye-wash), with directions for use. If carefully treated, there is no reason why the operation on the eye should not result favorably, as the fluid will be again secreted, and the organ resume its normal condition. If neglected, opacity will most likely take place and blindness ensue. As the owner has not as yet returned to report progress, we are unable to give the positive result, which we hope, however, may be satisfactory. Referring to the parasite, the "filaria papillosa," it may be said to be somewhat rare in the United States, that is, it is by no means

common. So far as we know, it is not known to exist in Great Britain at all, but is of frequent occurrence in India. We were invited by an officer of the Bureau of Animal Industry at Washington, D. C., to send the parasite to add to the National collection there, but as we had one of our own, we decided to add one more to the number of specimens, in the form of the filaria papillosa, the fellow responsible for the condition known as intra-ocular filariasis.

We cannot close without expressing our thanks for the valuable assistance afforded by the members of the senior class in veterinary science, and also and especially for the practical help given by assistant-surgeons (?) Professors Dodson, Himes, and Burnette, and Hospital-Surgeon Chaney, who held vigorously on to the ropes until the completion of the operation.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of patholo;ical science."

ACTINOMYCOSIS IN THE HORSE.

By COLEMAN NOCKOLDS, V. S., M. D., Grand Rapids, Mich.

The following may be of interest to some members of our profession. I was called some time since by a brother practitioner to dispose of what he regarded as a peculiar case.

Subject:—A bay gelding, aged, somewhat emaciated, pulse 135 and irregular; temperature 104.5° F.; respiration 34, irregular and labored.

History developed nothing, only that the owner had just traded for the animal. The sheath was swollen, hard and rugged; the scrotum was tense and looked and felt as if there was a hard irregular mass bearing down upon it. There was a discharge of a muco-purulent character running from the sheath, also from several openings in the sheath and scrotum.

Upon examining further, the deep and superficial inguinal lymphatics were very much enlarged and painful upon pressure. The horse being aged and almost worthless, the owner was advised to have it destroyed, but he wanted to have an operation performed, even though the horse died while down. After casting and securing the animal in a convenient position

an incision was made in the anterior region of the scrotum, and after dissecting a portion of the growth out it was found that removal was impossible without removing the sheath and a portion of the penis, which had become diseased and adherent to the mass. There were several large pockets of pus in the tumor, and after removing a portion of the neoformation, weighing 7½ lbs., the opening was dressed and packed, and, because of the excessive hæmorrhage, the enlarged glands were not removed at that time. Three days after the operation the owner destroyed the horse, although everything seemed to be progressing favorably towards recovery. Upon making a post-mortem, the gentleman who had the case informed me that not only were the superficial and deep inguinal glands involved, but a great many of the abdominal lymphatics were enlarged and contained pus. The whole length of the penis, the prostate gland, and the neck of the bladder were involved. Upon examining some pus and sections from the growths, I found numbers of the ray fungi actinomyces. It is evident that the animal must have been inoculated by the parasite during or following castration, and the adjacent tissues became infected by metastasis.

AMPUTATION OF THE PENIS.

By J. A. McCrank, D. V. S., Plattsburgh, N. Y.

While on a professional call to a neighboring village during November, 1898, I was invited to visit a gentleman's barn to see a horse—a beautiful black gelding, seven years old, 16 hands high, sound and a stylish driver, but he was affected with chronic paraphymosis. No history, as he was taken in a trade. The penis protruded some eight inches and had an uneven circumference of about fourteen inches. The owner wished very much to have it removed or cured, and wished me to undertake the work.

I am very careful of the small amount of reputation I have, so I shivered at the idea, never having undertaken such work before. I told the owner so, and advised him to trade once more, as I could not predict the outcome of such an operation. I said that the operation of removal was frequently performed with good results, but I did not care to try it on such a beast. In fact, I refused, and left the town for home. After two weeks he wrote me that he knew I could do the job, and that he was advised to turn the animal over to my care and to take all risks. I was now very mnch pleased at the confidence he had in me

and replied to bring on the horse and leave him with me.

The method of operation was the same as given in "Williams's Surgery." The tourniquet applied, antiseptics, the catheter inserted, the muscular part of the penis dissected away to leave about an inch of urethra projecting. The arteries were now secured with catgut ligatures; the urethra was next split into four strips, each one carefully sewed back to the skin and muscles of the penis. Next a liberal use of antiseptics. The animal was now allowed to rise; the sheath and surroundings were daily irrigated with antiseptics, and a soft diet was given.

The animal never evinced the least uneasiness nor stiffness. There was more or less hæmorrhage at times for three days. He never missed a feed and went to work in the team in two weeks' time and worked every day since. Since then I have operated on two such cases with similar results. I have my reputation yet, and have added fresh laurels in these cases.

This report is for my young and timid brother practitioners, who, like me, are preserving the reputations they have. I say "Go ahead; fear not, as long as you are cleanly in your work, and so long as your sound sense stands by you."

EXTRACTS FROM EXCHANGES.

AMERICAN REVIEW.

AN UNUSUAL INJURY WITH PECULIAR SEQUELÆ [*By E. P. Flower, Student U. S. Col. Vet. Surg.*].—The facts in the following interesting case are taken from the July *Journ. of Comp. Med.:* About February 1 a bay mare was brought to the college hospital with marked dyspnœa, caused by hard, fibrous-feeling enlargement midway of neck, seeming to have originated behind the trachea, pressing it from its normal position to the left. Owner said mare had been kicked while at pasture; shortly afterward slight enlargement was noticed, which gradually increased in size. After examination diagnosis of fracture of tracheal rings with secondary fibroma was made. Animal being spirited, resisted manipulation, and excitement caused increased dyspnœa. After fifteen minutes in stall, distress was alleviated. Tracheotomy was then done just below enlargement, when, to surprise of surgeon, a double polypus was found filling almost

the entire tracheal cavity—one suspended from membrane above, becoming constricted as it neared middle of trachea, the other starting from inferior portion of this constriction by a slender pedicle, flat in shape and swung like a pendulum, oscillating with each inspiration and expiration, thus being cause of the difficult breathing when excited. Ecraseur was passed around growth at its superior portion, just at its junction with membrane of trachea, and growth extracted. The fingers were then inserted, and worked around to outside of trachea, coming in contact with foreign substance imbedded in muscular parenchyma, the projection which had backed up against the trachea, causing its deviated position, producing intense inflammation, cause of polypi. After enlarging incision to permit introduction of heavy forceps, object was with difficulty removed, which proved to be a piece of chestnut rail, one inch in diameter and five inches in length, frayed and sharp at point, well preserved. Four times the forceps brought forth pieces of wood, ranging from one-half to three inches in length. They were encysted in a degenerated capsule of a caseous nature, probably organized inflammatory exudate. The author considers the most remarkable point in the case the fact that the morbid alterations were comparatively small, as entrance had been effected with violence, attended with laceration at point of entrance, and at no time had there been any suppuration. Owner finally remembered that in May, 1898, she had forcibly collided with fence, producing small wound at side of neck, which thoroughly healed in few days. In a few days mare was taken home, and was doing well when last heard from.

Eversion of Uterus in Mare [*By D. D. Lee, M. D. V., Boston, Mass.*].—A saddle mare came out of the arena at 5.30 and immediately the water-bag showed, and a ten-months-old dead colt was expelled. In two hours the mare became uneasy, and at 11 o'clock, being quiet, a soothing potion was given and the mare left for the night. At 3.30 A. M. the uterus and part of the horns were everted, the patient became frantic and bled profusely. The author being sent for, used side lines and returned the uterus. The rubber bag and bulb of a thermo-cautery were placed in the womb, after tying the tube, and the bag was blown up. She remained quiet until the next evening, when she began straining very badly, and tracheotomy was performed. This at once stopped the straining, and the bag was removed from the uterus. To prevent her from lying down slings were placed in position. Tube was removed in three

days, and the slings in five days. In ten days she was well. Six weeks prior to this accident the mare passed an examination for soundness.—(*Journ. Comp. Med.*)

ENGLISH REVIEW.

MEDIAN NEUROTOMY [*By W. B. Nelder*].—This operation is making its way in the domain of veterinary surgery, and continues to give the same satisfactory results in relieving lameness due to diseased conditions of ligamentous and tendinous structures, and to bony deposits of the lower parts of the anterior extremity. In his article the author records his experience in six cases where excellent results were obtained. Lameness due to splints, chronic thickening of the suspensory ligament, of the perforans and perforatus tendons, of ringbones and sidebones, and also navicular disease, were relieved and the animals returned to work, which they have performed ever since to the satisfaction of their owners. The lameness had existed previous to the operation for from three to six months and in two of the cases for twelve months. The cases were recorded in the *Journal of Comparative Pathology*. Mr. J. Webb, in the *Record*, reports the case of an aged mare which had been lame for several years, due to ringbone, chronic sprain of the back tendons, and an enlarged knee. In all three cases the lameness subsided immediately. In one it returned after three months, but was relieved by blistering, which permitted the animal to work for six months, when it was disposed of.

PULMONARY FILARIASIS IN A MULE [*By H. B. Elliot, M. R. C. V. S.*].—It is unfortunate that a minute post-mortem examination could not have been made in this interesting case; but imperfect as this was, the history and the manifestations presented, were certainly very uncommon. This mule, aged seven years, was laid up on account of lameness in the rear hind leg; she had been more or less tender in that extremity on several occasions. From general examination a diagnosis of hip lameness was made, and, the animal improving, she was returned to work. For several months the mule was able to perform her duties, although never entirely free from lameness; she was considered "a good working mule." One day she re-entered the hospital for a swelling extending from the point of the near elbow to the adjacent thoracic region, attended with considerable lameness of the near leg. This subsided under anodyne treatment. Some two weeks later she was found down in her

stall in great pain; she was raised, but was unable to stand. She kept constantly lying down, and was soon full of bed sores. General symptoms manifested themselves: pulse frequent, full and soft; temperature 102°; excretion natural; ravenous desire for food, but small amount ingested; mucous membranes injected. Lying down in a semi-paralytic condition, the mule dashed itself from side to side, and during some of this struggling fractured several ribs, which were not diagnosed until after death. The animal was finally destroyed, but on account of peculiar circumstances the post-mortem was not as minute as it should have been. The following condition was found: Quite a thick coat of fat through the abdominal muscles, under the peritoneum, and around the viscera. Heart, liver, spleen, kidneys, stomach, intestines, spinal cord, etc., were *apparently* normal. A few worms in the stomach and rectum. The ribs of the off side, from the fourth to the tenth, and the seventh and eighth ribs of the near side, were fractured. The lungs showed a marbled appearance of inflammatory lesion. On section a worm made its exit through one of the arterial vessels. A closer examination revealed the fact that the arteries swarmed with these worms. They were filaria.—(*Veterinary Record.*)

A CASE OF ACTINOMYCOSIS IN THE COW [*By James McPhail, M. R. C. V. S.*].—This case presents a great deal of interest, showing the importance of the use of the microscope in bringing out a correct diagnosis. A cow being examined by an inspector was found to have in the hind quarter of the off side of the udder a few hard lumps. After a fortnight these were much larger, fused together, but still confined to that quarter of the udder. Examination of the milk gave negative results. In six weeks the lumps were still larger, and the other side of the udder had become invaded. The cow was ultimately destroyed. At the post-mortem the hard masses of the udder were examined with the microscope, and exhibited the ray fungus of actinomycosis. When the lungs were removed and examined small nodules were found in them; these at first sight much resembled tuberculous deposits, but on being examined the ray fungus was again found, and the idea of tuberculosis discarded.—(*Veterinary Journal.*)

TUBERCULOSIS IN CATS [*By J. Pemberthy, F. R. C. V. S.*].—In a recent issue the *Veterinary Record* publishes some interesting remarks on this subject from the author, tending to demonstrate that cats may be a source of danger to man as far as tuberculosis is concerned. Although in practice for many

years, Mr. P. has not been called upon to make many post-mortems upon cats; but lately he has had the opportunity to follow three animals, and each one proved tuberculous. The lungs were found on post-mortem to be extensively consolidated, with almost the whole of the pulmonary tissues affected. The bronchial glands were more or less enlarged. In one of the animals tubercles were found on the abdominal viscera, the tubercle bacillus being present. Of course, these three cases may not be of positive value as a certain source of danger; yet they seem to prove that feline tuberculosis may be more common than is usually suspected. It is certain that more clinical observations and post-mortem examinations ought to be recorded and their history added to that already so rich of tuberculosis. —(*Veterinary Record.*)

TUBERCULOSIS OF THE HEART IN A COW [*By Prof. Stockman*].—The organ weighed 42½ pounds. The pericardium showed only a few recent tuberculous lesions; the epicardium, slightly altered, had its surface greatly raised by numerous tuberculous centres situated underneath in the walls of the heart. On section the organ was a mass of caseous matter, with many calcareous deposits. The inter muscular fibrous tissue was increased. Immediately around the cavities there was a narrow band of apparently sound muscular tissue. The cavities were, of course, much reduced in size. The valves were normal; the suprasternal lymphatic glands at the point of the pericardium, and the cardiac glands, offered an advanced caseous condition. The lungs contained no tuberculous lesions. The author believes in an infection through the lymphatic channels. —(*The Veterinarian.*)

EXTENSIVE DISEASE OF THE SPLEEN IN A HORSE [*By C. Dayus, M. R. C. V. S.*].—A sixteen-year-old hunter was losing condition, and received a mild dose of physic, with a little tonic medicine. Although his appetite remained fair, he kept gradually growing worse. After some time, suspecting some organic affection, in his attempts to make a diagnosis, careful examination by the rectum revealed the presence in the left hypochondriac region of a hard substance, which was supposed to be a mesenteric tumor, although the animal never manifested colicy pains. There was considerable tenderness over the spot on external pressure being applied, and the animal moved very stiffly on that side. The horse was destroyed, and at the post-mortem it was found that "the tumor was a greatly enlarged and extensively diseased spleen, which weighed exactly twenty pounds."

The other organs were healthy. Examination of the tumor revealed it to be tubercular in nature.—(*Veterinary Record.*)

GERMAN REVIEW.

By Prof. Olof Schwarzkopf, Flushing, N. Y.

Lactic Acid in the Treatment of Melanotic Tumors.—Vogel reports the successful application of lactic acid in the removal of melanotic tumors in horses. In several cases he injected a solution of 1:4 water around the basis of the tumor, using as many injections as the size and circumference of the tumor necessitates. This treatment results in an artificial digestion of the diseased tissue, gradually loosening the tumor from its surroundings. After a few days it becomes possible to enucleate the tumor with an elastic ligature or the ecraseur. The remaining wound surface is not of a malignant character as was expected, but rather shows a tendency to rapid repair under influence of antiseptic treatment.

Foreign Body in the Stomach of a Horse.—Eberbach reports an interesting post-mortem examination of a horse, which had been ailing ten days previous to death and had been treated for gastritis. On opening the abdomen the peritoneum appeared as reddish-green, and a quantity of bloodish fluid was emptied. After removal of the intestines and exposure of the stomach, a tumor of the size of a man's fist was found adhering to the large curvature of the stomach. The tumor was flat, of a tough structure, and microscopically made up of connective tissue with plenty of interstices. It was lengthways perforated by a needle, the point of which had penetrated the tumor. The stomach itself was partially filled with ingesta, and on the corresponding place of the tumor the mucosa was dark red and considerably swollen, the ear of the needle being exposed. The needle was 21 cm. long and of the kind used for fastening tobacco-leafs grown in that country. As the horse is a careful feeder and possesses such a skill in expelling even very small obnoxious objects from the mouth, this case is one of the few literally known. B. thinks that the needle, being taken up with the hay, stuck with its point in the tongue, and the horse being unable to expel it, was almost compelled to swallow it.—(*B. T. Wochenschrift.*)

BIBLIOGRAPHY.

PATHOLOGIE INTERNE DES ANIMAUX DOMESTIQUES (Internal Pathology of the Domestic Animals). Vols. VII and VIII. By Prof. C. Cadéac. Published by J. B. Baillière et Fils, Paris.

It is with great regularity that Prof. Cadéac continues the publication of his *Veterinary Encyclopœdia.* But a few months ago Vol. VI was issued, and now, within a few weeks of each other, Vols. VII and VIII are offered to the veterinary world.

Volume VII is divided into three parts:

The first part contains the continuation and the end of the diseases of the urinary apparatus, and in two distinct chapters the reader is made familiar with purulent nephritis, renal abscesses, amyloid and fatty degenerations, traumatism of the kidney, polycystic kidney, calculi, tumors, parasites, pyelitis, pyelonephritis, and cystitis.

The second part treats of diseases of the skin. In twenty-five chapters we notice alopecia, hypertrophy of the hairs, urticaria, erythema, dermitis, acnea, vaccina, horse and cow pox, pityriasis, impetigo, psoriasis, mange, acariasis, eczema, etc.

The third part is devoted to parasitic diseases of muscles, psorospermosis, measles, trichinosis.

Such are the subjects treated of in the seventh volume. The descriptions are clear, and it is filled with numerous illustrations.

Volume VIII completes the subject of internal pathology of the Encyclopœdia. It is divided into ten chapters. In the first, the various forms of meningitis are treated. In the second, diseases of the cerebrum, viz.: Cerebral anæmia, congestion, hæmorrhage, softening, insolation, ependymitis, encephalitis, tumors. In the third, affections of the cerebellum, viz.: Hæmorrhage and softening, abscesses, tumors. In the fourth, diseases of the pons. In the fifth, of the cerebral peduncles. In the sixth, of the bulb. From all these affections of the encephalic mass we pass to those of the spinal cord. In the seventh, spinal meningitis. In the eighth, affections of the cord substance—myelitis, chorea, etc. In the ninth we find epilepsy and the disease of Basedow. In the tenth chapter, under the head of poisoning, the subjects of lathyrismus and saturnism are treated.

There is no work in French veterinary literature which was more needed than such a treatise of internal pathology. It will prove of the greatest use to students, and practitioners will find

in reading it much material of interest and of instruction.

REVISTA CHILEMA DE HIJIENE (Chilean Review of Hygiene). By Director Dr. Alejandro del Rio, Santiago.

A handsomely gotten up book of nearly six hundred pages, and illustrated with eighteen plates, containing records of interest on hygiene and reports of several international congresses, such as that at Moscow, Madrid, and Paris, in which we find as collaborators many of the celebrated physicians of Chile.

CORRESPONDENCE.

REPORT ON DR. SCHMIDT S TREATMENT FOR PARTURIENT PARESIS.

CEDARBURG, WIS., AUG. 14, 1899.

Editors American Veterinary Review:

DEAR SIRS:—It is interesting to read the reports in the REVIEW of the potassium iodide treatment for parturient paresis. I believe we should all report the results we obtain. I will give my experience. I have had splendid results, but still I feel a little shaky. A few years ago I used nitro-glycerin with equally good results. The following season I used it again, and every case died for me. I follow Schmidt's directions to the letter, but in hot weather I use ice on the head, along with the other treatment.

Case No. 1.—Found down about 24 hours after delivery. Gave iodide injections. The next morning (about 24 hours after first injection) patient still down. Gave 125 grs. more. Six hours after last injection cow was on her feet, and made a good recovery.

No. 2.—Cow found down 20 hours after calving; owner thought she was dead when he reached the stable. I found her flat on her side; could not hold her head up. Gave her injection. Eight hours after when we wanted to turn her over she got on her feet, and, with the exception of stiffness for about one week, she did well.

No. 3.—Did not go down. Very shaky 24 hours after calving. Gave injection in the evening; cow all right next morning.

No. 4.—Found down 24 hours after calving. I saw her about four hours after she was found. This was about 9 o'clock A. M. I was very busy at the time, and the owner, thinking she

was not very bad, I did not call until next morning, when I was sent for in a hurry. When I reached the place the cow was dead. I believe that if she could have had another injection about eight hours after the first, she would be living to-day.

No. 5.—Taken ill three days after delivery; gave one injection; six hours after the cow was up moving around all right.

No. 6.—Cow taken ill 24 hours after delivery. Three hours after injection cow was walking around in barnyard.

No. 7.—Went down about 24 hours after calving. Gave injection about 2 o'clock P. M. Next day cow was still down, but feeling better. Gave second injection; about six hours after last injection cow got on her feet. Two weeks after owner reported she was doing as well as she ever did.

No. 8.—Went down on fifth day after calving. The weather was very hot. Gave 175 grs. potassium iodide. Eight hours after first injection not much improvement. Gave 150 grs. Next morning cow was on her feet. About two days after, owner reported udder badly swollen. Hot applications soon removed the swelling. Cow is now doing well.

S. S. SNYDER, D. V. S.

CEDARBURG, WIS., Aug. 16th, 1899.

POSTSCRIPT.—Since I wrote you on the 14th inst., I have case No. 9 of parturient paresis. I thought I would send it and it could go along with the rest. I think the treatment worked wonders in this case.

Case No. 9.—Jersey, calved Aug. 15th, 3 A.M.; was called at eleven o'clock A.M. to remove the placenta; at this time the cow would not eat nor drink, but still on her feet; gave 1 pound magnesia sulph. At 2 P.M. the owner called and told me the cow was down and could not get up. I gave her 175 grs. iodide potassium. At 8 P.M. I called again; she was still down. I gave her 120 grs. potassium iodide. This morning, the 16th, I called and found the cow walking around in the stable feeling almost as if nothing had happened her. It was only about eight hours after calving that I believe the disease started on her, and only about 11 hours until she was down and could not get up.

S. S. SNYDER, D. V. S.

GOOD RESULTS FROM SCHMIDT'S TREATMENT FOR PARTURIENT PARESIS.

FREMONT, NEB., July 25, 1899.

Editors American Veterinary Review:

DEAR SIRS:—I have used the Schmidt treatment for partu-

rient paresis with the best results. In the ten cases treated with it to date, a complete and thorough recovery has resulted in every case, without leaving any complication, as was often the case under the old treatment.

The most obstinate case was a patient which had a severe turn the year previous; she was down five days and the treatment was applied three times, and she made a splendid recovery.

The other cases all got up in from seven to twenty-four hours.

Yours truly,

H. CHAMBERS, M. R. C. V. S.

AS TO THE ANÆSTHETIC ACTION OF COCAINE.

ST. ANTHONY'S PARK, MINN., July 20, 1899.

Editors American Veterinary Review:

DEAR SIRS:—I notice in the July issue of the AMERICAN VETERINARY REVIEW that Dr. A. F. Abbott reports that he has found several horses in which the local anæsthetic effect of cocaine could not be produced, although the physiological effect was marked. There is also an editorial comment concerning similar experiences in practice. I have had at least one such case in which I failed to secure anæsthesia. I first injected 5 per cent. cocaine, over the posterior digital nerves of one front limb without result. I subsequently injected cocaine, same solution, over the plantar nerves in the usual way, and tried especially to put the cocaine as near the nerves as possible, but without result. I afterwards made another trial, this time injecting a sufficient quantity of 10 per cent. solution over the plantar nerves, waited six minutes and then applied elastic spiral bandage in such a way as to force a portion of the blood out of the superficial parts, beginning at the hoof. The elastic bandage was left tightly applied above the site of injection. In this way I have usually secured the most profound anæsthetic effect, but in this instance there was only a very slight loss of sensation over the inner half of the pastern and apparently no effect at all over the outer half of this region. The pressure above the site of injection was continued for perhaps an hour, and most of the cocaine must have been retained in the tissues surrounding the plantar nerves.

Cocaine from the same bottle was used repeatedly on cases that had come in previously and others that came subsequently, so that my experience cannot be charged to poor cocaine.

M. H. REYNOLDS.

SOME POISONOUS PLANTS.*

WOOLLY LOCO WEED.

Astragalus Mollissimus Torr. Other names: Loco Weed; Crazy-Weed (Fig. 8).

Description and Where Found.—A silvery-white, silky-leaved perennial, 8 to 12 inches high, with an abundance of soft foliage springing out in a cluster from a short, central stem close to the ground. The flowers are pea-shaped and usually purple, the pod is distinctly two-celled. This plant is native to the Great Plains region, extending from western Texas and New Mexico northward to South Dakota and Wyoming, being most abundant in Colorado and in the western part of Nebraska and Kansas. It grows both on the open prairie and on rocky hillsides.

How Stock are Affected.—Horses, cattle and sheep are affected by loco, but the principal damage is done to horses. The effect is not acute, but in its slow progress simulates diseases caused by bacteria, worms, or other parasites or such as are caused in man by the continued use of alcohol, tobacco, or morphine. Two stages are recognized. The first, which may last several months, is a period of hallucination or mania accompanied by defective eyesight, during which the animal performs all sorts of antics. After acquiring a taste for the plant it refuses every other kind of food, and the second stage is ushered in. This is a lingering period of emaciation, characterized by sunken eye-balls, lustreless hair, and feeble movements. The animal dies from starvation, in periods ranging from a few months to one or two years.

Damage Done.—The damage done to the live-stock business by this weed is immense. As mentioned in the introduction, the State of Colorado paid out nearly $200,000 in bounties between 1881 and 1885 in an attempt to exterminate it.

This genus contains a large number of species, and it is quite probable that many of these should be considered to be poisonous where they grow over wide areas of pasture land, and are green at periods when there is but little green grass. Over a half dozen have been reported to the Department of Agriculture as highly detrimental to the stock industry.

*Abstracted from the Farmer's Bulletin, No. 86, U. S. Dept. Agriculture, by W. J. Martin, M. D. C., Kankakee, Ill.

STEMLESS LOCO WEED.

Astragalus Lambertii (*Pursh*) *Greene. Other names: Loco Weed; Crazy Weed; Colorado loco vetch* (*Fig. 9*).

Description and Where Found.—This differs from the true loco weed most conspicuously in its more erect and branchless habit, its longer leaflets, which are linear or oblong instead of orate, and the one-celled pod. It ranges over the same territory as does the woolly loco weed, but extends farther, being found throughout the Great Plains from British America to Mexico, and it also ascends higher in the mountains, growing luxuriantly at Silver Cliff, in Colorado, at an altitude of about 8000 feet.

Symptoms.—So far as has been observed, the symptoms of poisoning are identical with those of the preceding species. The two plants are considered to be equally prejudicial to the stock-raising interests of New Mexico.

(*From the San Francisco Examiner.*)

THE HERALD AUTOMOBILE'S COMEDY RUN.

INSIDE STORY OF THE TRANSCONTINENTAL TRIP.

Pity the sorrows of a poor, old, broken-down transcontinental automobile! The machine left New York twenty-two days ago for a spirited dash across the continent, giving the horse the laugh en route. The last entry in the log of the automobile reports that fragile vehicle stalled at Buffalo, twenty-two days out, and still within the borders of the Empire State. At this rate, Mr. and Mrs. John D. Davis, passengers and crew, will be candidates for admission into the Old People's Home by the time their journey ends.

More than 3000 miles of miry country roads, mountain steeps and desert stretches, where blacksmith shops are few, yet remained to be covered. And the further the machine travels from the automobile foundry in New York the longer it takes for repairs to overhaul it.

With the throttle in one hand and a monkey wrench in the other, Mr. Davis dashed merrily away from Herald Square, New York, on July 13, intending to break the automobile record to San Francisco. As there was no record to begin with, the unfortunate Mr. Davis busied himself breaking the automobile. Each day of the twenty-two resulted in from one to five breaks of some vital part. When anything else refused to give way,

the brake broke or the gasoline gave out. The village blacksmiths along the route already covered have taken their families to the seaside, and the all-round repairers of the West are assembling at the roadside to assist Mr. Davis on his troubled way.

Here is an accurate log of the automobile, taken from the daily report Mr. Davis wired to a morning paper in San Francisco.

July 13.—Started from Herald Square, New York City, for a run of 4000 miles against time to the office of a morning paper in San Francisco. Between Gotham and Tarrytown the motor got a hot box and stopped. Used two gallons of gasoline, but still she stuck. Lost four hours waiting for ice to cool the motor.

July 14.—Broke rear cylinder, and a link in the crank shaft gave way in a chuck hole. Continued with one cylinder working until the nut dropped off the left hind wheel and lost itself in the dust. Finished the run with a fence rail in lieu of a wheel.

July 15.—With a new nut in place the automobile grew fractious and plunged into a ditch, snapping the brass casting that controls the valve of rear cylinder. Lost three hours making repairs with solder. Friction melted solder and crew towed automobile three miles to a blacksmith shop.

July 16.—Lost nut off exhaust valve of rear cylinder. Spent three and one-half hours looking for the nut. Made new one of a thumbscrew, which endured until time for another break. Tied up for the night and wondered what would happen next day.

July 17.—Piston got hot, jammed fast and the motor stuck. Took half a day to make the wheels go around, and then they squeaked. Then the brake broke and the automobile dropped anchor alongside a cornfield. "We are hoodooed for starting on the 13th," said the crew.

July 18.—Towed into Utica and laid up to wait for repairs from New York factory.

July 19.—Still waiting. During the night the automobile broke in a new place while standing still.

July 20.—New rear wheels with three-inch tires arrived from New York factory. Put them on and pulled out for Syracuse.

July 21.—Somebody has monkeyed with the spanking brushes, which slipped out of place and dislocated a few spokes. Stopped for repairs. The bolt connecting piston between the two cylinders then snapped, tore a large hole in the cylinder casing and bent the main shaft. Picked up by an ox team and

towed into Syracuse. Crew feeling somewhat depressed.

July 22.—Decided to wait at Syracuse for new cylinder from the factory.

July 26.—Hurrah! New cylinder here at last, but the men at the factory forgot to bore hole in it.

July 28.—Finished drilling the hole.

July 29.—Hole too small. Cylinder grew hot every few minutes and stalled the automobile. Made poor time.

July 31.—New nuts on inlet valve persisted in falling off. Stopped at Palmyra for new ones. Spindle in rear valve broke again. Two hours repairing it. Laid up at Rochester and had inlet valves and spindles made heavier.

August 1.—Jumped ditch, ran into stone flagging and bent forward axle. Country blacksmith worked all day and all night to straighten axle. Automobile wabbles badly. Seems to be getting groggy.

August 2.—Grounded fast near Bergen for want of gasolene. Special train arrived with one quart. Started again. Frenzied newspaper reporter stepped on tailboard and broke it. Put him off at Buffalo.

August 3.—Fixing tailboard at Buffalo.

Little remains of the original outfit beyond Mr. and Mrs. Davis, the roof and cushions. With such an appalling array of disasters in less than five hundred miles, the question arises: How many automobiles will Mr. Davis consume before reaching San Francisco? Time is another important question. By winding wagon road the distance from Buffalo, where they put the reporter off the broken tailboard, to San Francisco is all of 3500 miles.

No preparations have yet been made to welcome the automobilists, either by the paper interested or the managers of the Old People's Home. There is time enough.

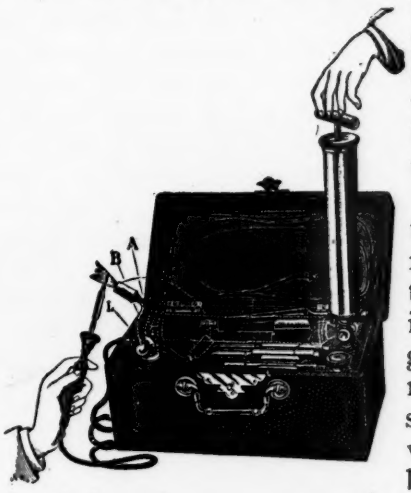
CHARLES DRYDEN.

P. S.—Since the above was in type we learn that the fiasco was abandoned at Cleveland, Ohio.

DR. C. D. MCMURDO, 10th Cavalry, U. S. Army, who has been stationed in Santiago Province, Cuba, is at home in Shadwell, Va., on a four months' furlough for the purpose of recuperation. Dr. McMurdo is an enthusiastic army veterinarian, with the elevation of the standard of the service steadily in view. He recently passed the army examination, and expects to attend the veterinary "Jubilee" in New York.

DRUMM'S BULBLESS THERMO-CAUTERY.

The illustration given herewith is that of the new thermo-cautery recently invented by Mr. F. Drumm, of 43 Park Street, New York City, so well and favorably known to the veterinary profession of the country through the excellent cautery bearing his name, and which is used by so many practitioners.



In the above instrument it is the object of the inventor and manufacturer to dispense with the bulb, since he was frequently in receipt of complaints of the degeneration and bursting of the rubber. Here the bulb has been supplanted by a pump, which works easily and effectively, and by those who have employed it a decided preference over the bulb is expressed. There is no danger of explosion, it is easily kept clean, and it is little liable to get out of working order.

SOCIETY MEETINGS.

MISSOURI VALLEY VETERINARY MEDICAL ASSOCIATION.

(*Continued from page 378.*)

Dr. H. G. Patterson, of South St. Joseph, Mo., being called upon presented the following paper:

"THE PRACTICABILITY OF ANTISEPSIS IN VETERINARY PRACTICE."

This subject may be considered in relation to the favorable and unfavorable conditions peculiar to the field of veterinary surgery. At a casual glance the subject seems to present the former in a very insignificant proportion indeed, and by the most careful review of the question we must admit that the latter constitute a most formidable array.

The fact that our patients are not amenable to reason constitutes one serious obstacle to the ready application of the technique of asepsis even in our simpler operations.

Could we place our subject in proper position by a gentlemanly request to sit down here now, or just lie down on this table, or turn this way or that way, or could we induce him to take the anæsthetic by a kindly suggestion as to quiet regular breathing, closed eyes, etc., it would place us one long stride in advance of our present situation. It is true that gentleness and patience, with a certain firmness and confidence in our superiority of mind over that of any lower animal, goes far towards controlling the most nervous or vicious; but the instant we inflict pain—we arouse the instinct of self-preservation and inseparable from it.

The effort to escape, or the most vigorous defensive measures the victim is capable of, makes restraint by force our only resource. While restraint is unpleasant, unsatisfactory, even when applied in the most scientific and skillful manner, it is not entirely devoid of danger to the patient and to those who must handle him.

The difficulty in retaining suitable protective dressings confronts us immediately on concluding an operation. The external conformation and the hairy covering render the application of bandages, or adhesive strips a trying task, and if not displaced by the struggles incident to its release from the mechanism by which it has been controlled, they are at once regarded as an infringement on ts personal liberty not to be tolerated, and its ingenutiy in undoing our finest handiwork is only equalled by the opportunities afforded by the ignorance and stupidity of the average attendant in whose care our dumb friend must be left, and right at this point a most trying and difficult position confronts us.

The majority of us are compelled to leave our patients to the tender mercies of a class of men who by their environments and social conditions are, as a rule, neither intellectually nor morally desirable as nurses. Contend as we may for the equality of American citizens, the fact remains that a man who works long hours, frequently exposed to cold and storms—held responsible for accidents—whether due to his carelessness or not—and withal overworked and underpaid, develops habits inimical to the service required and necessary for the proper care of veterinary patients. It is also impossible to impress such men with the importance of absolute cleanliness in their services. Filthy personal habits—if nothing else—render them unteachable in this line. If fortunate enough to escape all these pitfalls, we still have the unsanitary surroundings both in city and country practice.

Filthy stalls, urine soaked, foul-smelling, without ventila-

tion, or if ventilated at the expense of warmth and protection from storms. Now, gentlemen, these are stern facts, *not dreams;* we see them every day and yet I am convinced that aseptic surgery is not only practicable, but in the interests of our patient, patron, purse, and our profession, profitable and indispensable. To offset in some measure this deplorable list of adverse conditions, we have on the other hand the simplicity of living, absence of vicious habits, rarity of nervous complications, and, above all, an inherent power of resistance to infective germs. Consider the *almost total* immunity of the horse to such diseases as anthrax, tuberculosis, erysipelas, etc. Give a surgeon such conditions in his treatment of the human family and surgery is robbed of half its dangers.

Consider again the number of ovariotomies annually perpetrated (I believe that is the proper word considering the skill of the parties usually employed in such work) on heifers and other animals, with no attempt at even ordinary cleanliness observed by butchers, and with a very small per cent. of fatalities, and we have infallible proof of this resistance to pathogenic germs. How much more may we not accomplish by the strict adherence to the principles of asepsis and antisepsis, discard the filthy stable bucket, dirty water and greasy sponge. Sterilize our instruments, sponges, hands, and prepare thoroughly our field of operation. In short, observe the full technique as approved by our best surgeons, and notwithstanding so much that seems to threaten failure, results will be both surprising and gratifying. I have refrained from any discussion of the comparative value of antiseptics. The careful and thorough application of the principle to the case in hand is of much more importance. If we cleanse everything by heat and apply good soap, brush, razor, and elbow grease, we are very near the goal. The selection of the antiseptic is, and always will remain much a matter of choice and custom, or individual experience.

Wherever the process of bacterial infection exists, whether it be in external wounds, or in internal viscera, the use and administration of antiseptics is *highly indicated*, and if directed timely, and with proper judgment and selection, nothing but decided benefit can accrue from their use.

I would deem it needless excess to indulge in a recitation of the application of antiseptics to external wounds and trauma before this intelligent audience, but permit me to call your attention to a field of application which I believe is not recognized by very many veterinarians.

I refer generally to the internal antiseptics, but *particularly to their use* in the treatment of *intestinal disorders*, especially those characterized by the presence of undue quantities of gas.

Here antiseptics work *marvellous favorable changes*, and the administration of one good antiseptic will do more good than all the 16 and 32 oz. mixtures from the use of which animals are being killed every day.

Numerous good antiseptics might be used, but my favorite in such conditions is carbolic acid in doses of 10 to 20 drops given with water and glycerine every half or one hour, according to the urgency of the case.

Salicylic acid in drachm doses is also an excellent antiseptic in such cases, but in my opinion not equal to carbolic acid.

The sterilization of the urinary passage by the internal administration of antiseptics is also a reputable procedure. Boric acid in drachm doses, exhibited four to five times daily, together with the sedative action of fld. ex. buchu, is the treatment par excellence.

I will not take up more of your time in speaking of the special administration of antiseptics, for to remember their general applicability is but to know their use in special affections.

DISCUSSION.

Dr. Stewart :—Antiseptic surgery is a subject in which I am very much interested and one which the paper has quite happily introduced. The surgeon who does not employ antiseptics in his practice is certainly laboring at a great disadvantage, and the range of its application should constantly increase. In many surgical and accidental wounds where it did not seem advisable to close the wound entirely, it was my practice to employ an old-time agent sometimes called white lotion; this compound was made many years before antisepsis was thought of, yet its antiseptic action, as well as its curative action, is well established. With reasonable care and cleanliness the veterinary surgeon can secure highly satisfactory results in the treatment of nearly all surgical wounds, and it seems strange to me that so few surgeons make full use of antiseptics in their every-day practice. There is one operation to which I will allude to where the results for me have been most gratifying, healing by first intention being commonly secured. I refer to the ordinary neurectomy for navicular and other pedal lamenesses. I would like to hear what Dr. Hansen has to say on the subject.

Dr. Hansen :—I did not come here to talk, but must say

that Dr. Patterson's point as to the power of resistance in the horse to the germs of disease is very patent. My experience in veterinary surgery certainly upholds his paper.

CHICAGO VETERINARY SOCIETY.

President Robertson called the regular monthly meeting to order on Thursday evening, May 11th, directing his remarks toward legislation, and the Veterinary Bill that was recently passed by the legislature, expressing his regret for the savage attack made upon it by the veterinary press at that time. He recited the opinion of many who are perfectly satisfied that an act more favorable to the profession in this State would not pass the Legislative Assembly at the time. Feeling that progress has been made at present and hoping that through the Board of Veterinary Examiners as provided by the bill the veterinarians will be brought closer to the legislative and executive officers of the powers that be, and through this closer communion be able to more effectively present the needs of the profession.

Dr. L. A. Merillat explained how little the opposition was to the measure, there being but three dissenting votes in the upper and seven in the lower house, while no opposition at all was evident from practitioners.

On a motion presented by Dr. O. R. Dubia, it was resolved that the society extend a vote of thanks to Drs. Robertson and Merillat for their excellent work in behalf of the measure.

The Board of Censors reported favorably on the application of Dr. Joseph Donovan and his election to membership followed.

A communication received from Dr. H. D. Gill, chairman of the committee of arrangements of the A. V. M. A., was read and referred for consideration at the June meeting.

Dr. O. R. Dubia presented the following subjects for discussion:

DR. DUBIA'S POINTS FOR DISCUSSION.

Sesamoiditis.—This should mean inflammation of the sesamoids, but is applied to other structures in that region, and may be ostitis, ligamentitis, or synovitis, any or all of them. Conformation predisposes to this disease, as shown by certain families with long pasterns and great speed. There is lameness; palpation reveals thickening and tenderness of the fetlock, and on trotting little or no flexion of the fetlock can be noticed, the knee compensating in part for the loss. It is more common in the hind legs. The soundness of the animal depends somewhat

on the part affected, but at best I would call such an animal only "serviceably sound." Hunters and hurdle horses are commonly affected.

Windgalls.—This is a distension of the sesamoid sheath which extends two inches above the fetlock or to the bifurcation of the suspensory ligament. It is due to hypersecretion of synovia and the absence of any rigid structures to prevent distention laterally. This condition cannot be called an unsoundness unless it causes lameness, which it does when distention from accumulation of synovia gives rigidity to the sheath. This is readily determined by forcing the animal to stand on the affected leg, when palpation reveals the amount of rigidity. They are common to all horses, but especially to racers. When soft to the touch it is not an unsoundness.

Anterior Bursal Enlargements.—This condition is seen only on the hind leg in the bursæ of the extensor pedis tendons in the front of the fetlock. It is generally due to falls, stumbling or knuckling. When infected they cause very acute lameness, swelling and pain. As the condition even when chronic readily yields to treatment the patient might be called serviceably sound.

Thickening of the Fibrous Structures.—This subject is almost too indefinite for consideration, including as it does all the structures of the region except the osseous, vascular, nervous and epithelial.

Knuckling.—Knuckling is an abnormal forward deviation in the direction of the phalanges, but must not be confused with straight pasterns. It is often symptomatic or may be due to contraction of the flexors. The diseases and conditions which may cause this trouble are too numerous to mention. It may be idiopathic, as seen in animals with upright pasterns. This is especially true when the animal is overworked or subjected to faulty shoeing. It is always an unsoundness.

Interfering or Malformation.—This is a condition in which the moving leg strikes or cuffs the fellow. It is mostly seen in animals with narrow chest or with a faulty conformation of the leg or foot. Weariness, weakness, overwork or faulty shoeing, may be exciting causes. The striking may be slight or only enough to part the hair, or it may be sufficient to cut and bruise the part and cause lameness. When due to malformation it is an unsoundness, but when the exciting causes prevail, it should be dealt with judiciously in justice to all concerned.

Ringbone.—This is an exostosis on the os corona, os suffra-

ginis, or both. It often causes persistent lameness, but the inflammation aborts as anchylosis sets in, movement is limited and permanent stiffness results. They are variously classified according to location as "high" and "low," and again they may be divided into "true" and "false." The latter are often due to rickets and for use should not be called an unsoundness, but must not be overlooked in selecting a breeding animal. True ringbones may be divided into articular or those involving the gliding surface, or periarticular or upon the joint and is not as serious as the articular form. Ringbones must be always considered an unsoundness, because they impair the usefulness of the animal.

Sprain of the Inferior Suspensory Ligaments.—These ligaments are commonly known as the X, Y, and V ligaments, and are located posteriorly to the pastern. When sprained severely they cause a thickening of the cortex. A sprain of these structures is usually caused by speeding, jumping or desperate traction. Animals so affected are unfit for fast and heavy work and are therefore unsound, slight sprains which terminate favorably in a few days excluded.

DISCUSSION.

Dr. Hawley: I understood Dr. Dubia to say that a windgall if soft was not an unsoundness. I have seen windgalls as large as a hen's egg, and though the horse showed no lameness and the windgalls were soft and the horse was capable of performing services all right, still it being a blemish I cannot consider the horse sound.

Dr. Dubia: I called such a horse "serviceably sound."

Dr. Hawley: Has this society adopted the expression "serviceably sound?" If so, I want to know when the terms "sound" and "serviceably sound" should be used.

Dr. Robertson: The agreement made when we first opened this discussion was that we were to continue the work until all the topics were presented and discussed, and then endeavor to come to some understanding as to when to apply the term "serviceably sound" and "sound."

Dr. Merillat: Has Dr. Hawley ever seen a copy of the rules adopted by the Stock Yard Company governing this point?

Dr. Hawley: These rules were formed by Mr. F. J. Berry, but they are of no consequence whatever.

Dr. Merillat: I think it the policy of the Horse Commission Union to call a horse "serviceably sound" that has only such defects that do not materially affect his usefulness nor value.

This society should either formulate new rules or revise the old ones, if, as Dr. Hawley says, they are of no value.

Dr. Robertson : Mr. Newgass, in his opening addresses at his sales, says there are no perfectly sound horses and hence the term "serviceably sound."

Dr. Hawley : They have a so-called Horse Commission Union at the yards which from time to time make rules which all members must adhere to. These rules are, however, imperfect, and I believe, in fact am positive, if this society would make up a set of rules governing this matter the Horse Commission would accept them. It would be a good plan to do so after this discussion has closed.

Dr. Robertson : I think it is a good suggestion to revise these rules, and would recommend Dr. Hawley on a committee, as he is familiar with the matter, and besides represents both the veterinarians and the horse dealers.

Dr. Hawley : In regard to windgalls, I would like to know if anybody has ever successfully treated a chronic case, *i. e.*, to make the legs as smooth as before their appearance. What is the recognized treatment?

Dr. Merillat : Counter-irritation and aspiration or both will, if repeatedly resorted to, cure most any bursal enlargement. Another method, though a dangerous one, is to simply lance them and allow the wound to suppurate. This procedure is always followed by great pain, swelling and suppuration, from which the patient finally recovers minus the bursal enlargement. I would, however, not recommend such treatment.

Dr. Dyson : I opened up several of them and never had any serious results, and got rid of the windpuffs. I use an antiseptic and it leaves no scar.

Dr. Robertson : I know of a case that was cured by a trotting horse trainer by simply bandaging.

Dr. Hawley : I would say that a man that can treat windgalls successfully has "a good thing." I have a horse in my possession now that cannot be sold for a respectable price because of windgalls, as a horse like that is considered second-handed.

Dr. Merillat : Dr. Dyson's treatment for windgalls is indeed remarkable. It is difficult to understand how such a large synovial surface can be exposed to external influences without some of the typical disturbances. The only way to account for it is that his operations were strictly aseptic and that no invasion was permitted during the healing process.

Dr. Dyson: I have one case at my barn now with two windgalls that I opened, and I will show them to you, so that you can judge for yourself.

Dr. Robertson: As to anterior bursal enlargements, the doctor says they are usually found in the hind limb. I have seen very bad cases in the fore limb. JOS. B. CLANCY, *Sec.*

MAINE VETERINARY MEDICAL ASSOCIATION.

The regular meeting was held in Bangor, July 12th. In the afternoon a clinic for small animals was held at Dr. Murch's office. Besides numerous minor operations, Dr. Murch demonstrated a very simple and successful method for ovariotomy in the bitch.

At 7.30 P. M. a meeting was held in the Bangor House. Both President and Vice-President being absent, Dr. Russell was elected chairman *pro tem.* The following members answered the roll-call: Drs. Russell, Cleaves, Joly, Murch, Dwinal, Freeman and Salley. The minutes of the previous meeting were read and accepted, and the financial standing of the society was discussed. The Secretary was instructed to collect all dues. It was voted to hold a special meeting at New York on Sept. 5th.

Dr. Joly was elected representative to the meeting at New York of the American Veterinary Medical Association in September.

It was then voted to adjourn to meet at Waterville in October. I. L. SALLEY, *Secretary.*

NEWS AND ITEMS.

CHICAGO'S SALE RECORD FOR 1891: 118,754 horses sold; 40,000 exported.

DR. SAMUEL G. HENDREN, B. A. I., Indianapolis, Ind., was recently married to Miss Marion Weber, of Lewistown, Pa.

JAMES M. ROSE, a non-graduate ridgling castrator of note, died at Wilkinsburg, Pa., July 15.

J. W. FERGUSON, V. S., Ontario, '81, died from injuries by being kicked by an equine patient at Bay City, Mich., in June.

"IN A HOSS TRADE, do unto the other feller as he would like to do unto you—but do it fust."—*David Harum.*

"ACCEPT MY CONGRATULATIONS on the literary success of the REVIEW."—*H. D. Stebbins, V. S., West Winfield, N. Y.*

"I ENJOY THE REVIEW VERY MUCH, and have learned many useful things from it."—*W. A. McClanahan, D. V. M., Redding, Iowa.*

DR. GEORGE E. NESOM, Professor of Veterinary Medicine at Clemson College, South Carolina, was married July 10 to Miss Bessie O'Brien, of Starkville, Miss.

THE Citizens' Business League of Milwaukee, Wis., has already sent out literature showing the advantages of that city, and asking the A. V. M. A. to meet there in 1900.

IT is believed that a commission of British army officers is at present in this country looking over the mule markets with a view to making large purchases of mules for use in South Africa. They were in New Orleans this week.

DR. W. J. MARTIN, Kankakee, Ill., President of the State Association, has been added to the staff of collaborators of the REVIEW. Dr. Martin is a hard student, a close observer, and a graceful, entertaining writer, and our readers are to be congratulated upon the acquisition.

MANY local veterinarians have written and endorsed the article in the August REVIEW entitled "Contemptible Method of Practicing Veterinary Medicine." If the veterinarians of New York do their duty the exciting cause of that article will soon have ceased to exist.

WE are informed that the announcement in the July REVIEW that Dr. H. L. Ramacciotti had been appointed veterinarian to the Greater American Exposition, to be held in Omaha, Neb., this summer, is incorrect, and that Dr. G. R. Young, of that city, received the official appointment by the Executive Committee, Dr. R. receiving the assistantship position.

"THE NEW YORK SUN" is at war with "the *Automobile Gazette*" (formerly the New York *Herald*), showing that its "personal" advertisements constitute an obscene directory which disgraces American journalism. With a record of outraging morality, its attacks upon the horse industry of the country can have little effect.

DR. L. A. MERILLAT'S OPINION OF IODOFORM.—"Iodoform must be regarded as one of the most valuable antiseptics for veterinary surgery. It promotes granulation, limits the exudates, relieves pain, is practically non-toxic, and, besides, unlike other dry antiseptics, it does not prevent immediate union when caught between the edges of wounds."—(*Jour. Comp. Med.*)

"WE could not think of doing without your valuable journal; it contains so many practical hints and valuable communi-

cations. When we get 'stuck' on a case we search the REVIEW and always find some article that gives us some light, if not the information wanted."—*Smith and Scripture, D. V. S., Frankfort, Indiana.*

IT is announced that the first number of *The Veterinarian and Farrier of Australasia* will appear on October 15. It is to be a monthly journal for veterinarians, horse and cattle breeders and farriers, and in a letter from the publishers, H. Greatorex & Co., 17 Butchers' Lane, Melbourne, Australia, the objects and character of the magazine are stated of follows: "It will be our endeavor to maintain as high a pitch of literary and practical excellence as possible, and with the federation of our different provinces the journal has an influential career in front of it."

JOHN G. SLEE, D. V. S., late veterinary surgeon to Seventh Army Corps, stationed at Havana, Cuba, has returned to the United States, and is awaiting assignment to duty by the Bureau of Animal Industry, he having been in charge of the Brighton Abattoir when he volunteered his services to the War Department. Dr. Slee had some peculiar and interesting veterinary experiences while with the army, both in garrison and field, and he has promised to favor the readers of the REVIEW with their details.

"THE AUTOMOBILE GAZETTE," formerly the New York *Herald*, chronicles every turn of the wheel of this new and unsatisfactory horseless carriage, incidentally giving a thrust at the horse whenever opportunity offers, being too thick to foresee that the soliped will continue to enjoy the love of man, and be his faithful servant, when his maligner is gone and forgotten. It is difficult to understand why American horsemen continue to put dollars into the pockets of its alien publisher which he uses to sport about the French capital in his pet vehicle.

PECULIAR SICKNESS OF A TRAINLOAD OF HORSES.—A trainload of 560 horses, which Powell Brothers were bringing from North Yakima, Wash., to South Omaha, was unloaded at Billings, Mont., for water and feed. They had been given no water since leaving Spokane, thirty hours previous. They were at once fed hay and water was run into the troughs. Soon after feeding and drinking the horses began to go into spasms and many died. Twenty-hours later about half were dead, and it was feared that all would die. It was noticed that the horses were scouring when they came in, but no one could offer an explanation of the cause of the deaths. The stomachs of several have been saved for analysis.—(*Breeders' Gazette.*)

ACTION OF CREOLIN ON CATS.—A Brooklyn woman was the owner of one Tom cat and three kittens, the mother of the kittens and their maternal aunt having been destroyed by chloroform on account of being affected with mange. The kittens and their father showing some symptoms of the same disease, were submitted to a bath composed of creolin, 1 part; water, 25 parts. In twenty minutes two of the young ones were deathly sick, described as lying upon their sides and gasping for breath, with vomiting and tetanic convulsions; the third with vomiting, staggering gait, abstinence from food, very fast pulse, and was destroyed the next day, the other two dying during the first afternoon. The vigorous parent showed evidence of illness as early as the kittens, but being more resistant, did not at once succumb. When seen by a veterinarian two days later, he had a temperature of 106° F., pulse 160, with spells of difficult respiration and threatened heart failure. In spite of stimulants and nutrients, he was found dead the next morning. To those who have regarded creolin as a non-poisonous agent, this case may be interesting as showing its action upon members of the feline family.

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